

**PERMIT #69780**  
**PLACE ID #2393**

**PERMITTEE:** Phoenix Cement Company  
**FACILITY:** Portland Cement Company  
**PERMIT TYPE** Class I Air Quality Permit  
**DATE ISSUED:**  
**EXPIRY DATE:**

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**SUMMARY**

This Class I operating permit is issued to Phoenix Cement Company, the Permittee, for the continued operation of a Portland cement plant and quarry. The facility is located at 601 North Cement Plant Road in Clarkdale, Arizona 86324. This is a renewal of Permit #54623.

The facility's potential to emit (PTE), of air pollutants exceeds major source thresholds. Therefore, the facility is classified as a major source as defined in A.A.C. R18-2-101(75), and requires a Class I permit pursuant to A.A.C. R18-2-302.B.1.a.

This permit is issued in accordance with Arizona Revised Statutes (ARS) 49-426. It contains requirements from Title 18, Chapter 2 of the A.A.C. and Title 40 of the Code of Federal Regulations. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code R18-2-101 et. seq. (A.A.C.) and Title 40 of the Code of Federal Regulations (CFR), except as otherwise defined in this permit.

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## ATTACHMENT "A": GENERAL PROVISIONS

### I. PERMIT EXPIRATION AND RENEWAL

- A. This permit is valid for a period of five (5) years from the date of issuance.  
[ARS § 49-426.F, A.A.C. R18-2-306.A.1]
- B. The Permittee shall submit an application for renewal of this permit at least six (6) months, but not more than eighteen (18) months, prior to the date of permit expiration.  
[ARS § 49-426.F, A.A.C. R18-2-304.D.2]

### II. COMPLIANCE WITH PERMIT CONDITIONS

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona Revised Statutes (A.R.S.) Title 49, Chapter 3, and the air quality rules under Title 18, Chapter 2 of the Arizona Administrative Code. Any permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.  
[A.A.C. R18-2-306.A.8.a]
- B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.  
[A.A.C. R18-2-306.A.8.b]

### III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

- A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.  
[A.A.C. R18-2-306.A.8.c]
- B. The permit shall be reopened and revised under any of the following circumstances:
1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term;  
[A.A.C. R18-2-321.A.1.a]
  2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit;  
[A.A.C. R18-2-321.A.1.b]

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; and  
[A.A.C. R18-2-321.A.1.c]
  4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.  
[A.A.C. R18-2-321.A.1.d]
- C.** Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.  
[A.A.C. R18-2-321.A.2]

#### **IV. POSTING OF PERMIT**

- A.** The Permittee shall post this permit or a certificate of permit issuance at the facility in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:
1. Current permit number; or
  2. Serial number or other equipment identification number (equipment ID number) that is also listed in the permit to identify that piece of equipment.  
[A.A.C. R18-2-315.A]
- B.** A copy of the complete permit shall be kept on site.  
[A.A.C. R18-2-315.B]

#### **V. FEE PAYMENT**

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.  
[A.A.C. R18-2-306.A.9 and -326]

#### **VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE**

- A.** The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31<sup>st</sup> or ninety (90) days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.  
[A.A.C. R18-2-327.A]
- B.** The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.B.  
[A.A.C. R18-2-327.B]

#### **VII. COMPLIANCE CERTIFICATION**

- A.** The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15<sup>th</sup>, and shall report the compliance

status of the source during the period between October 1<sup>st</sup> of the previous year and March 31<sup>st</sup> of the current year. The second certification shall be submitted no later than November 15<sup>th</sup>, and shall report the compliance status of the source during the period between April 1<sup>st</sup> and September 30<sup>th</sup> of the current year.

[A.A.C. R18-2-309.2.a]

**B.** The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;

[A.A.C. R18-2-309.2.c.i]

2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,

[A.A.C. R18-2-309.2.c.ii]

3. Status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the methods or means designated in Condition VII.B.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;

[A.A.C. R18-2-309.2.c.iii]

4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;

[A.A.C. R18-2-309.2.c.iii]

5. All instances of deviations from permit requirements reported pursuant to Condition XII.B; and

6. Other facts the Director may require to determine the compliance status of the source.

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

**C.** A copy of all compliance certifications shall also be submitted to the EPA Administrator.

**D.** If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

**VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS**

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[A.A.C. R18-2-304.I]

**IX. INSPECTION AND ENTRY**

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

- A.** Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;  
[A.A.C. R18-2-309.4.a]
- B.** Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;  
[A.A.C. R18-2-309.4.b]
- C.** Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;  
[A.A.C. R18-2-309.4.c]
- D.** Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and  
[A.A.C. R18-2-309.4.d]
- E.** Record any inspection by use of written, electronic, magnetic and photographic media.  
[A.A.C. R18-2-309.4.e]

**X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD**

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

[A.A.C. R18-2-304.D.3]

**XI. ACCIDENTAL RELEASE PROGRAM**

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

[40 CFR Part 68]

**XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING**

**A. Excess Emissions Reporting**

[A.A.C. R18-2-310.01.A, B, and C]

**1. Excess emissions shall be reported as follows:**

- a.** The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

  - (1)** Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.
  - (2)** Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.

[A.A.C. R18-2-310.01.A]

b. The report shall contain the following information:

- (1) Identity of each stack or other emission point where the excess emissions occurred;  
[A.A.C. R18-2-310.01.B.1]
- (2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;  
[A.A.C. R18-2-310.01.B.2]
- (3) Date, time and duration, or expected duration, of the excess emissions;  
[A.A.C. R18-2-310.01.B.3]
- (4) Identity of the equipment from which the excess emissions emanated;  
[A.A.C. R18-2-310.01.B.4]
- (5) Nature and cause of such emissions;  
[A.A.C. R18-2-310.01.B.5]
- (6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;  
[A.A.C. R18-2-310.01.B.6]
- (7) Steps taken to limit the excess emissions; and  
[A.A.C. R18-2-310.01.B.7]
- (8) If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.  
[A.A.C. R18-2-310.01.B.8]

2. In the case of continuous or recurring excess emissions, the notification requirements shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above.  
[A.A.C. R18-2-310.01.C]

**B. Permit Deviations Reporting**

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the applicable requirement contains a definition of prompt or otherwise specifies a timeframe for reporting deviations, that definition or timeframe shall govern. Where the applicable requirement does not address the timeframe for reporting deviations, the Permittee shall



submit reports of deviations according to the following schedule:

1. Notice that complies with A.A.C. R18-2-310.01.A is prompt for deviations that constitute excess emissions;  
[A.A.C. R18-2-306.A.5.b.i]
2. Notice regarding upset conditions, which are defined as malfunctions or breakdowns of pollution control equipment, continuous emissions monitoring systems (CEMS), or continuous opacity monitoring systems (COMS) that are submitted within two working days of discovery, shall be considered prompt; and  
[A.A.C. R18-2-306.A.5.b.ii]
3. Except as provided in Conditions XII.B.1 and 2 above, notice that complies with Condition I.B of Attachment “B” is prompt for all other types of deviations. Any such deviations that occur during the semi-annual reporting period shall be clearly identified in the report required by Condition I.B of Attachment “B,” concurrent with the semi-annual compliance certification required by Condition VII of Attachment “A”.  
[A.A.C. R18-2-306.A.5.a]

**C. Emergency Provision**

1. An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.  
[A.A.C. R18-2-306.E.1]
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if Condition XII.C.3 is met.  
[A.A.C. R18-2-306.E.2]
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:  
[A.A.C. R18-2-306.E.3]
  - a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;  
[A.A.C. R18-2-306.E.3.a]
  - b. The permitted facility was being properly operated at the time of the emergency;  
[A.A.C. R18-2-306.E.3.b]
  - c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and  
[A.A.C. R18-2-306.E.3.c]

- d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

[A.A.C. R18-2-306.E.3.d]

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

[A.A.C. R18-2-306.E.4]

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[A.A.C. R18-2-306.E.5]

**D. Compliance Schedule**

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

[ARS § 49-426.I.3]

**E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown**

**1. Applicability**

A.A.C. R18-2-310 establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;  
[A.A.C. R18-2-310.A.1]
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;  
[A.A.C. R18-2-310.A.2]
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;  
[A.A.C. R18-2-310.A.3]
- d. Contained in A.A.C. R18-2-715.F; or  
[A.A.C. R18-2-310.A.4]
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.  
[A.A.C. R18-2-310.A.5]

**2. Affirmative Defense for Malfunctions**

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than

a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

[A.A.C. R18-2-310.B]

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;  
[A.A.C. R18-2-310.B.1]
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;  
[A.A.C. R18-2-310.B.2]
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;  
[A.A.C. R18-2-310.B.3]
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;  
[A.A.C. R18-2-310.B.4]
- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;  
[A.A.C. R18-2-310.B.5]
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;  
[A.A.C. R18-2-310.B.6]
- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;  
[A.A.C. R18-2-310.B.7]
- h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;  
[A.A.C. R18-2-310.B.8]
- i. All emissions monitoring systems were kept in operation if at all practicable; and  
[A.A.C. R18-2-310.B.9]
- j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.  
[A.A.C. R18-2-310.B.10]

3. Affirmative Defense for Startup and Shutdown

- a. Except as provided in Condition XII.E.3.b, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

[A.A.C. R18-2-310.C.1]

- (1) The excess emissions could not have been prevented through careful and prudent planning and design;

[A.A.C. R18-2-310.C.1.a]

- (2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;

[A.A.C. R18-2-310.C.1.b]

- (3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

[A.A.C. R18-2-310.C.1.c]

- (4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

[A.A.C. R18-2-310.C.1.d]

- (5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

[A.A.C. R18-2-310.C.1.e]

- (6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

[A.A.C. R18-2-310.C.1.f]

- (7) All emissions monitoring systems were kept in operation if at all practicable; and

[A.A.C. R18-2-310.C.1.g]

- (8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.

[A.A.C. R18-2-310.C.1.h]

- b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

[A.A.C. R18-2-310.C.2]

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2.

[A.A.C. R18-2-310.D]

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or XII.E.3, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

[A.A.C. R18-2-310.E]

### **XIII. RECORDKEEPING REQUIREMENTS**

**A.** The Permittee shall keep records of all required monitoring information including, but not limited to, the following:

[A.A.C. R18-2-306.A.4.a]

1. The date, place as defined in the permit, and time of sampling or measurements;

[A.A.C. R18-2-306.A.4.a.i]

2. The date(s) any analyses were performed;

[A.A.C. R18-2-306.A.4.a.ii]

3. The name of the company or entity that performed the analyses;

[A.A.C. R18-2-306.A.4.a.iii]

4. A description of the analytical techniques or methods used;

[A.A.C. R18-2-306.A.4.a.iv]

5. The results of analyses; and

[A.A.C. R18-2-306.A.4.a.v]

6. The operating conditions as existing at the time of sampling or measurement.

[A.A.C. R18-2-306.A.4.a.vi]

**B.** The Permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

[A.A.C. R18-2-306.A.4.b]

### **XIV. REPORTING REQUIREMENTS**

The Permittee shall submit the following reports:

**A.** Compliance certifications in accordance with Condition VII.

[A.A.C. R18-2-306.A.5.a]

- B.** Excess emission; permit deviation, and emergency reports in accordance with Condition XII.

[A.A.C. R18-2-306.A.5.b]

- C.** Other reports required by any condition of Attachment “B”.

**XV. DUTY TO PROVIDE INFORMATION**

- A.** The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.

[A.A.C. R18-2-304.G and -306.A.8.e]

- B.** If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

[A.A.C. R18-2-304.H]

**XVI. PERMIT AMENDMENT OR REVISION**

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Condition XVII, as follows:

- A.** Administrative Permit Amendment (A.A.C. R18-2-318);

[A.A.C. R18-2-318]

- B.** Minor Permit Revision (A.A.C. R18-2-319); and

[A.A.C. R18-2-319]

- C.** Significant Permit Revision (A.A.C. R18-2-320)

[A.A.C. R18-2-320]

The applicability and requirements for such action are defined in the above referenced regulations.

**XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION**

- A.** The Permittee may make changes at the permitted source without a permit revision if all of the following apply:

[A.A.C. R18-2-317]

1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(24);

[A.A.C. R18-2-317.A.1]

2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;

[A.A.C. R18-2-317.A.2]

3. The changes do not violate any applicable requirements or trigger any additional

applicable requirements;

[A.A.C. R18-2-317.A.3]

4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A;

[A.A.C. R18-2-317.A.4]

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements; and

[A.A.C. R18-2-317.A.5]

6. The changes do not constitute a minor NSR modification.

[A.A.C. R18-2-317.A.6]

- B.** The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.

[A.A.C. R18-2-317.B]

- C.** For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change, as possible or, if advance notification is not practicable, as soon after the change as possible.

[A.A.C. R18-2-317.D]

- D.** Each notification shall include:

1. When the proposed change will occur;

[A.A.C. R18-2-317.E.1]

2. A description of the change;

[A.A.C. R18-2-317.E.2]

3. Any change in emissions of regulated air pollutants; and

[A.A.C. R18-2-317.E.3]

4. Any permit term or condition that is no longer applicable as a result of the change.

[A.A.C. R18-2-317.E.7]

- E.** The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section.

[A.A.C. R18-2-317.F]

- F.** Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.

[A.A.C. R18-2-317.G]

- G.** Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted

by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

[A.A.C. R18-2-317.H]

## **XVIII. TESTING REQUIREMENTS**

[A.A.C. R18-2-312]

- A.** The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

[A.A.C. R18-2-312.A]

**B.** Operational Conditions During Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

[A.A.C. R18-2-312.C]

- C.** Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

[A.A.C. R18-2-312.B]

**D.** Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);
3. Test method(s); and
4. Source operation and other parameters that may affect test results.

[A.A.C. R18-2-312.D]

**E.** Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;

[A.A.C. R18-2-312.E.1]

2. Safe sampling platform(s);

[A.A.C. R18-2-312.E.2]

3. Safe access to sampling platform(s); and

[A.A.C. R18-2-312.E.3]



4. Utilities for sampling and testing equipment.

[A.A.C. R18-2-312.E.4]

**F. Interpretation of Final Results**

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

[A.A.C. R18-2-312.F]

**G. Report of Final Test Results**

A written report of the results of performance tests conducted pursuant to 40 CFR 63, shall be submitted to the Director within 60 days after the test is performed. A written report of other performance tests shall be submitted within 30 days after the test is performed or as otherwise provided in the Arizona Testing Manual. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

[A.A.C. R18-2-312.A]

**H. Extension of Performance Test Deadline**

[A.A.C. R18-2-312.J]

For performance testing required under Condition XVIII.A above, the Permittee may request an extension to a performance test deadline due to a force majeure event as follows:

[A.A.C. R18-2-312.J]

1. If a force majeure event is about to occur, occurs, or has occurred for which the Permittee intends to assert a claim of force majeure, the Permittee shall notify the Director in writing as soon as practicable following the date the Permittee first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline. The notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall be given as soon as practicable.

[A.A.C. R18-2-312.J.1]

2. The Permittee shall provide to the Director a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the Permittee proposes to

conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure event occurs.

[A.A.C. R18-2-312.J.2]

3. The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Director. The Director shall notify the Permittee in writing of approval or disapproval of the request for an extension as soon as practicable.

[A.A.C. R18-2-312.J.3]

4. Until an extension of the performance test deadline has been approved by the Director under subsections Conditions XVIII.H.1, 2, and 3 above, the Permittee remains subject to the requirements of Condition XVII of Attachment A.

[A.A.C. R18-2-312.J.4]

5. For purposes of Condition XVIII, a “force majeure event” means an event that will be or has been caused by circumstances beyond the control of the Permittee, its contractors, or any entity controlled by the Permittee that prevents it from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the Permittee's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the Permittee.

[A.A.C. R18-2-312.J.1]

## **XIX. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

[A.A.C. R18-2-306.A.8.d]

## **XX. SEVERABILITY CLAUSE**

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

[A.A.C. R18-2-306.A.7]

## **XXI. PERMIT SHIELD**

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled “Permit Shield”. The permit shield shall not apply to minor revisions pursuant to Condition XVI.B of this Attachment and any facility changes without a permit revision pursuant to Condition XVII of this Attachment.

[A.A.C. R18-2-317.F, - 320, and -325]

## **XXII. PROTECTION OF STRATOSPHERIC OZONE**

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

[40 CFR Part 82]

## **XXIII. APPLICABILITY OF NSPS/NESHAP GENERAL PROVISIONS**

For all equipment subject to a New Source Performance Standard or a National Emission Standard for Hazardous Air Pollutants, the Permittee shall comply with all applicable requirements contained

in Subpart A of Title 40, Chapter 60 and Chapter 63 of the Code of Federal Regulations.

[40 CFR Part 60 and Part 63]

## ATTACHMENT “B”: SPECIFIC CONDITIONS

### I. GENERAL REQUIREMENTS

#### A. Opacity

##### 1. Instantaneous Surveys and Six-Minute Observations

###### a. Instantaneous Surveys

Any instantaneous survey required by this permit shall be determined by either option listed in Conditions I.A.1.a.(1) and (2):

###### (1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

[A.A.C. R18-2-311.b]

###### (2) EPA Reference Method 9 Certified Observer.

[A.A.C. R18-2-306.A.3.c]

###### b. Six-Minute Observations

Any six-minute observation required by this permit shall be determined by either option listed in Conditions I.A.1.b.(1) and (2):

###### (1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

[A.A.C. R18-2-311.b]

###### (2) EPA Reference Method 9.

##### 2. Monitoring, Recordkeeping, and Reporting Requirements

a. At the frequency specified in the following sections of this permit, the Permittee shall conduct an instantaneous survey of visible emissions from both process stack sources, when in operation, and fugitive dust sources.

b. If the plume on an instantaneous basis appears less than or equal to the applicable opacity standard, then the Permittee shall keep a record of the name of the observer, the date on which the instantaneous survey was

made, and the results of the instantaneous survey.

- c. If the plume on an instantaneous basis appears greater than the applicable opacity standard, then the Permittee shall immediately conduct a six-minute observation of the plume.
  - (1) If the six-minute observation of the plume is less than or equal to the applicable opacity standard, then the Permittee shall record the name of the observer, the date on which the six-minute observation was made, and the results of the six-minute observation.
  - (2) If the six-minute observation of the plume is greater than the applicable opacity standard, then the Permittee shall do the following:
    - (a) Adjust or repair the controls or equipment to reduce opacity to less than or equal to the opacity standard;
    - (b) Record the name of the observer, the date on which the six-minute observation was made, the results of the six-minute observation, and all corrective action taken; and
    - (c) Report the event as an excess emission for opacity in accordance with Condition XII.A of Attachment "A".
    - (d) Conduct another six-minute observation to document the effectiveness of the adjustments or repairs completed.

- B. Nothing in this Attachment shall be so construed as to prevent the utilization of measurements from emissions monitoring devices or techniques not designated as performance tests as evidence of compliance with applicable good maintenance and operating requirements.

[A.A.C. R18-2-312.I]

## II. FACILITY-WIDE LIMITATIONS

### A. Applicability

The conditions of this Section apply to the pollutant-emitting activities facility wide.

### B. Emission Limitations and Standards

#### 1. Facility-Wide Emission Limits

*The Permittee shall not cause to be discharged into the atmosphere from facility-wide operations air emissions calculated as rolling 12-month total in excess of the following:*

[A.A.C. R18-2-306.01 and -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

- a. *773 tons per year of particulate matter (PM);*

- b. 460 tons per year of PM with an aerodynamic diameter less than 10 microns (PM<sub>10</sub>);
- c. 401 tons per year of sulfur dioxide (SO<sub>2</sub>);
- d. 3,271 tons per year of nitrogen oxides (NO<sub>x</sub>);
- e. 764 tons per year of carbon monoxide (CO); and
- f. 41.5 tons per year of volatile organic compounds (VOC)

2. Kiln 4/In-Line Raw Mill and Coal Mill Emission Limits

[A.A.C. R18-2-306.01 and -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

- a. The Permittee shall not cause to be discharged into the atmosphere from the Kiln 4/In-Line Raw Mill and Coal Mill operation, air emissions in rolling 12-month total in excess of the following:
  - (1) 400 tons SO<sub>2</sub> per year;
  - (2) 3,240 tons NO<sub>x</sub> per year; and,
  - (3) 698 tons CO per year
- b. The Permittee shall not cause to be discharged into the atmosphere from the Kiln 4/In-Line Raw Mill and Coal Mill operation, any gases which contain CO in excess of 2.0 pounds per ton of clinker in rolling 8-hour average.

3. Operation Limitations

- a. The Permittee shall not discharge quarry explosives in excess of the following:

[A.A.C. R18-2-306.01 and -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

- (1) 1473 tons per year as a rolling 12-month total;
- (2) 113 tons per calendar day; and
- (3) 15 tons per hour
- b. The Permittee shall not store clinker in the open except when performing specialty grinding in the warmer months of any given year, during which time, the Permittee may maintain temporary outdoor storage of no more than 2,000 tons of clinker.

[A.A.C. R18-2-306.A.2]

- c. The Permittee shall operate and maintain all equipment at the facility in accordance with the manufacturer's specifications.

[A.A.C. R18-2-306.A.2]

- d. Fuel Usage

[A.A.C. R18-2-306.A.2]

- (1) The Permittee shall only burn the following fuels at the facility:

Fuel Type	Maximum Fuel Proportion (% Heat Input)
Coal	100
Pet-Coke	100
#2 Fuel Oil	100
Natural Gas	100

- (2) Maximum fuel proportion is defined as the maximum percent of actual heat input provided by a fuel component in a fuel mixture.

**C. Air Pollution Control Requirements**

1. Except as provided in Condition II.B.3.b above, the Permittee shall at all times, store clinker in the two clinker storage domes (DO-200 and DO-201) and the clinker bin (B-404) for minimizing particulate emissions from clinker handling and storage activity.

[A.A.C. R18-2-306.01]

2. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain the production activities facility-wide, including any associated air pollution control equipment and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by Conditions II.B above.

[A.A.C. R18-2-306.01 and -331.A.3.e]

[Material permit conditions are indicated by underline and italics]

3. Good air pollution control practices include, but are not limited to, implementation of the following by the Permittee to ensure good combustion practice:

[A.A.C. R18-2-306A.2]

- Manufacturer's specified operating procedures;
  - Startup, shutdown and malfunction plan required by Condition III.D.3 of this Attachment;
  - Operation and Maintenance Plan included in Attachment "E" of this Permit.
4. Determination of whether acceptable operation and maintenance procedures are being used for minimizing emissions will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[A.A.C. R18-2-306A.2]

**D. Monitoring and Performance Testing Requirements**

1. The Permittee shall calibrate, maintain and operate continuous emission monitoring systems (CEMS) at Kiln 4/In-Line Raw Mill stack (S-401) and at Coal

Mill stack (S-453), for measuring CO, NO<sub>x</sub> and SO<sub>2</sub> concentrations in the exhaust gases passing each stack. All continuous emissions monitoring systems shall meet the following:

[A.A.C. R18-2-306.A.3.c and 331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- a. The Permittee shall follow the monitoring procedures and performance specifications as required by Subpart A and Appendix B of 40 CFR Part 60.
- b. The Permittee shall maintain 95 percent data recovery on all the data obtained from the CEMS. Compliance with this data recovery requirement shall be determined based on total Kiln 4 operating time during a 365 day period.
- c. The CEMS shall be designed so that one cycle of operation is complete for each successive 15-minute period.
- d. All data gaps shall be filled with the average hourly concentration recorded by the CEMS for the hour immediately before and the hour immediately after the missing data period.
- e. Instrument span shall be such that the expected output is 50 to 70 percent of span.
- f. The Permittee shall operate CEMS as per the approved Quality Assurance/Quality Control (QA/QC) plan. The QA/QC plan shall be at least as stringent as required by Appendix F of 40 CFR Part 60 and shall include a quarterly CEMS auditing scheme that requires a relative accuracy test audit (RATA) at least once every four calendar quarters, rotated by cylinder gas audits (CGA) or relative accuracy audits (RAA) in other three of the four calendar quarters. The CGA or RAA shall be conducted no more than three quarters in succession. The Permittee shall notify the Director 14 days prior to performing RATA or CGA.

2. The Permittee shall calibrate, maintain and operate flow monitors at K4/In-Line Raw Mill stack (S-401) and at Coal Mill stack (S-453), for measuring volumetric flow rates of the exhaust gases passing each stack. All flow monitors shall meet the following:

[A.A.C. R18-2-306.A.3.c and 331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- a. The Permittee shall follow the monitoring procedures and performance specifications as required by Subpart A and Appendix B of 40 CFR Part 60.
- b. The Permittee shall maintain 95 percent data recovery on all the data obtained from the flow monitors. Compliance with this data recovery requirement shall be determined based on total Kiln 4 operating time during a 365 day period.
- c. All data gaps shall be filled with the average hourly flow rate recorded by the flow monitor for the hour immediately before and the hour



immediately after the missing data period.

3. The Permittee shall calibrate, maintain and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced by Kiln 4. The scale system shall be maintained within  $\pm 5\%$  accuracy. A process weigh scale may be substituted for this purpose, provided it meets the accuracy test.

[A.A.C. R18-2-306.A.3.c and 331.A.3.c]

[Material permit conditions are indicated by underline and italics]

4. The Permittee shall conduct performance tests to determine PM and PM<sub>10</sub> emissions as follows:

[A.A.C. R18-2-306.A.3.c and 312]

- a. The performance tests shall be conducted at and samples be withdrawn from the following locations and in accordance with the following frequencies:

Test Location	Test Frequency
Kiln 4 Stack S-401	Annually
Clinker Cooler Stack S-402	Annually
Coal Mill Stack S-453	Annually
OK Mill Stack S-350	Once every two years
	DC301 Vent Once every five years (in the first year of permit term)
	DC302 Vent Once every five years (in the first year of permit term)
	DC303 Vent Once every five years (in the first year of permit term)

- b. The following USEPA Reference Methods shall be used for the performance tests:

- (1) For PM, Methods 1-5 with Method 202 for back half; and
- (2) For PM<sub>10</sub>, Methods 1-5 or Method 201/201A with Method 202 for back half.

- c. All performance tests shall follow the procedures under Section XVIII of Attachment "A" of this permit.

#### E. Compliance Determination

[A.A.C. R18-2-306.A.3]

1. The Permittee shall keep records of the following hourly average data for each stack/vent, based on measurements performed by the CEMS and flow monitors:
  - a. Pounds per hour of SO<sub>2</sub> emissions
  - b. Pounds per hour of NO<sub>x</sub> emissions
  - c. Pounds per hour of CO emissions
2. The Permittee shall keep records of the following hourly data from production activities, based on measurements performed by weigh scale system or other equivalent methods:
  - a. Tons per hour of clinker produced
  - b. Tons per hour of quarry explosives discharged
3. The Permittee shall calculate and record at the end of each hour, rolling 8-hour average CO emissions in pounds per ton of clinker (lb/ton) from both Kiln 4 stack S-401 and Coal Mill stack S-453 combined, using the hourly data from Conditions II.E.1 and 2 above;
4. The Permittee shall maintain a record of explosives discharged each hour. At the end of each calendar day, the Permittee shall calculate and record tons of quarry explosives usage for that day.

[A.A.C. R18-2-306.A.3.c]
5. The Permittee shall perform the following on the last day of each calendar month:
  - a. Calculate and record emissions of SO<sub>2</sub>, NO<sub>x</sub> and CO separately, the monthly emissions total in tons from the Kiln 4 stack S-401 and Coal Mill stack S-453, using the hourly data from Condition II.E.1 above.
  - b. Record emissions of SO<sub>2</sub>, NO<sub>x</sub> and CO separately, the rolling 12-month total in tons from Kiln 4 stack S-401 and Coal Mill stack S-453, using the monthly emission data for the immediate past 12 consecutive months.
  - c. Record emissions of PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> and CO and VOC separately, the rolling 12-month emissions total in tons from facility-wide operations. The emissions evaluation shall be conducted using monthly emission data for the immediate past 12 consecutive months, that may include, but is not limited to, the most recent stack testing results, rolling 12-month emission totals of individual sources, vendor provided emission data, and/or the current AP-42 factors published by USEPA. If available, the data type with the higher preference level shown as follows shall always be utilized in the evaluation:
    - (1) CEMS (the highest preference);
    - (2) Parametric source tests;
    - (3) Single source tests;

- (4) Material balance;
  - (5) Source category emissions model;
  - (6) State/industry factors; and
  - (7) AP-42 emission factors (the lowest preference).
- d. Calculate and record in tons, the quarry explosives usage for that month and the rolling 12-month total.
6. The Permittee shall determine compliance with the rolling 8-hour CO emissions limit set forth in Condition II.B.2.b by comparing Condition II.E.3 CO calculation results to this limit.
7. The Permittee shall determine compliance with the rolling 12-month total emission limits set forth for each pollutant in Conditions II.B.1 and 2 by comparing Condition II.E.5 results to the limits corresponding to that pollutant.
8. The Permittee shall determine compliance with the quarry explosives limits set forth in Condition II.B.3.a by comparing Conditions II.E.2, 4 and 5 explosives usage results to the limits.

**F. Recordkeeping and Reporting Requirements**

[A.A.C. R18-2-306.A.4 and 305.A.5]

1. The Permittee shall report to the Director consistent with Condition XII.A, of Attachment “A” of this permit, any emissions in excess of the limits established under Conditions II.B.1 and 2 of this Attachment.
2. The Permittee shall report to the Director consistent with Condition XII.B, of Attachment “A” of this permit, any incidence that exhibits deviation from the operation limitations established under Condition II.B.3 of this Attachment.
3. The Permittee shall submit a semiannual report along with the compliance certification to include the following information for the past six (6) months period:
  - a. Rolling 8-hour averages of CO emissions total in pounds per ton of clinker (lb/ton) from Kiln 4 stack S-401 and Coal Mill stack S-453 calculated at each hour. This item may be submitted in an electronic format.
  - b. For SO<sub>2</sub>, NO<sub>x</sub> and CO separately, the monthly emissions totals in tons from Kiln 4 stack S-401 and Coal Mill stack S-453 tallied at each month.
  - c. For SO<sub>2</sub>, NO<sub>x</sub> and CO separately, the rolling 12-month emissions totals from Kiln 4 stack S-401 and Coal Mill stack S-453 for each month.
  - d. For PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> and CO and VOC separately, the rolling 12-month emissions totals in tons from facility-wide operations for each month.
  - e. Summary of all incidences of exceedance or deviation occurred during the

past six (6) months to include:

- (1) Magnitude of each exceedance or deviation recorded;
- (2) Any conversion factor(s) used in calculation;
- (3) Date and time of commencement and completion of each exceedance or deviation due to:
  - (a) Startup/shutdown
  - (b) Control equipment problems
  - (c) Process problems
  - (d) Other known causes, or
  - (e) Unknown causes
- (4) Nature and cause of any malfunction, if known;
- (5) Corrective action taken or preventative measures adopted;
- (6) Total duration of exceedance or deviations during the reporting period;
- (7) Total source operating time during the reporting period; and
- (8) The percentage of the total exceedance or deviation time calculated as follows:

$$\frac{(\text{Total duration of exceedance or deviations}) * 100}{(\text{Total source operating time})}.$$

- f. A monitoring systems performance report for each continuous emission monitoring system (CEMS) that includes:

- (1) Each CEMS downtime in the reporting period due to:
  - (a) Monitor equipment malfunction
  - (b) Non-Monitor equipment malfunction
  - (c) Quality assurance calibration
  - (d) Other known causes, or
  - (e) Unknown causes
- (2) Nature of the system repairs or adjustments;
- (3) Total CEMS downtime; and

- (4) The percentage of the total CEMS downtime calculated as follows:

$$\frac{(\text{Total CEMS downtime})}{(\text{Total source operating time})} * 100$$

4. The Permittee shall maintain a file of all measurements including performance testing, continuous monitoring system (CMS) performance evaluations, all continuous monitoring system or monitoring device calibration checks, and adjustments and maintenance performed on the systems or devices. This data shall be recorded in a permanent form suitable for inspection.
5. The Permittee shall maintain the following:
- a. Hourly records of rolling 8-hour average of CO emissions total in pounds per ton of clinker (lb/ton) from Kiln 4 stack S-401 and Coal Mill stack S-453.
  - b. For SO<sub>2</sub>, NO<sub>x</sub> and CO emissions, separately, records of monthly emissions total in tons from Kiln 4 stack and Coal Mill stack S-453.
  - c. For SO<sub>2</sub>, NO<sub>x</sub> and CO emissions, separately, monthly records of rolling 12-month emissions total in tons from Kiln 4 stack S-401 and Coal Mill stack S-453.
  - d. For PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> and CO and VOC emissions, separately, monthly records of rolling 12-month emissions total in tons from facility-wide operations.
  - e. Records of hourly, daily and rolling 12-month total quarry explosives usage.
  - f. Daily records of the type and amount of each fuel component utilized in Kiln 4.
  - g. Records of the manufacturer's specifications for all equipment on-site.
  - h. Records of the hourly clinker produced in tons.
6. All records, analyses, and reports shall be retained for a minimum of five years from the date of generation. The most recent two years of data shall be kept on-site.

### III. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS

#### A. Applicability

The affected sources subject to this Section are:

1. The in-line kiln/raw mill system that includes Kiln 4 (K-404), Pre-heater PH-404 through 408 and CAL-404, In-Line Raw Mill RM-306 and Coal mill RM-450;

2. Clinker Cooler CC-404;
3. Raw Mill BM-301 and Swing Mill BM-302 when used for raw feed grinding;
4. Finish Mills BM-303 and 304, OK Mill BM-305, and Swing Mill BM-302 when used for clinker grinding;
5. Raw material dryers BM-301 and BM-302 when used for raw feed grinding;
6. Each raw material, clinker, or finished product storage bin;
7. Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln;
8. Each bagging and bulk loading and unloading system; and
9. Each open clinker storage pile

**B.** All citations in Section III of this Permit reference the year 2017 version of 40 CFR 63 Subpart LLL as listed in Federal Register 82 FR 39671.

[A.A.C. R18-2-306.A.2]

**C. Emission Limits/Standards**

1. The Permittee shall comply with the following standards for the Kiln, Clinker Cooler, Raw material Dryer, and Raw and Finish Mills

[40 CFR 63.1343(a), 63.1343(b)]

**Table -1 – Emissions/Operating Standards**

Source	Operating mode	Pollutant	Emissions Limits
Kiln 4	Normal operation	PM	0.07 lb/ton clinker
		D/F	0.2 ng/dscm (TEQ)
		Mercury	55 lb/MM tons clinker
		THC	24 ppmvd
		HCl	3 ppmvd
	Startup and shutdown	Work practices under Condition V.C.3.b	
Clinker Cooler	Normal operation	PM	0.07 lb/ton clinker
	Startup and shutdown	Work practices under Condition V.C.3.a	
Raw Material Dryer	Normal operation	THC	24 ppmvd
	Startup and shutdown	Work practices under Condition V.C.3.a	
Raw or Finish mill	All operating modes	Opacity	10 percent

2. General Requirements for Emission standards

[40 CFR 63.1343(a) and (b)]

- a. All D/F, HCl, and total hydrocarbon (THC) emission limits shall be measured on a dry basis.
- b. D/F, HCl, and total hydrocarbon (THC) emission limits for kilns shall be corrected to 7% oxygen.

- c. The PM emissions limit shall apply to the combined emissions from the kiln and the inline coal mill stack.
- d. If the average temperature at the inlet to the first particulate matter control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less, the D/F emissions limit shall not exceed 0.4 ng/dscm (TEQ).
- e. Standards for mercury and THC shall be based on a rolling 30-day average.
- f. THC shall be measured as propane.
- g. Instead of 24 ppmvd THC limit, the Permittee may elect to meet an alternative limit of 12 ppmvd for total organic HAPs.
- h. If using CEMS to determine compliance with the HCl standard, the emissions limit shall be based on a rolling 30-day average.

*Rolling average* means the weighted average of all data, meeting QA/QC requirements or otherwise normalized, collected during the applicable averaging period. The period of a rolling average stipulates the frequency of data averaging and reporting. To demonstrate compliance with an operating parameter a 30-day rolling average period requires calculation of a new average value each operating day and shall include the average of all the hourly averages of the specific operating parameter. For demonstration of compliance with an emission limit based on pollutant concentration a 30-day rolling average is comprised of the average of all the hourly average concentrations over the previous 30 operating days. For demonstration of compliance with an emissions limit based on lbs-pollutant per production unit the 30-day rolling average is calculated by summing the hourly mass emissions over the previous 30 operating days, then dividing that sum by the total production during the same period.

The 30-day period means all operating hours within 30 consecutive kiln operating days excluding periods of startup and shutdown.

[40 CFR 63.1341]

3. Standards for Open Clinker Piles

The Permittee shall prepare and operate an open clinker pile in accordance with the fugitive dust emissions control measures that are appropriate for the site conditions and described in the operation and maintenance plan under Condition IV.C of this Attachment.

[40 CFR 63.1343(c)]

4. Emissions Limits for Affected Sources Other Than Kilns, Clinker Coolers, and New/Reconstructed Raw Material Dryers.

The Permittee shall not cause to be discharged from any raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, existing raw material dryer, raw & finish mills, and bulk loading or unloading system any gases which exhibit opacity in excess of 10 percent.

[40 CFR 63.1345]

**D. General Requirements**

1. Operation and Maintenance Requirements
  - a. Operation and maintenance requirements established in this permit pursuant to Section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

[40 CFR 63.6(e)(1)(iii)]
  - b. The Permittee shall prepare, for each affected source subject to the provisions of this Section, a written operations and maintenance plan. The plan shall be submitted to the Director for review and approval as a significant permit revision application.

[40 CFR 63.1347(a)]
  - c. The operations and maintenance plan shall include the following information:

[40 CFR 63.1347(a)]

    - (1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits in Conditions III.C;
    - (2) The operation and maintenance plan shall also address periods of startup and shutdown.
    - (3) Corrective actions to be taken when required by condition III.G.1.c; and
    - (4) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.
  - d. The operations and maintenance plan shall include the following dust control measures appropriate for site conditions:

[40 CFR 63.1343(c)]

    - (1) The operation and maintenance plan shall identify and describe the location of each current or future open clinker storage pile and the fugitive dust emissions control measures the Permittee shall use to minimize fugitive dust emissions from each open clinker storage pile.
    - (2) For open clinker storage piles, the operations and maintenance plan shall specify that one or more of the following control measures will be used to minimize to the greatest extent practicable fugitive dust from open clinker storage piles:
      - (a) Locating the source inside a partial enclosure
      - (b) Installing and operating a water spray or fogging system
      - (c) Applying appropriate chemical dust suppression agents



- (d) Use of a wind barrier, compaction, use of tarpaulin or other effective cover, or use of a vegetative cover
  - (3) The Permittee shall select, for inclusion in the operations and maintenance plan, the fugitive dust control measure or measures listed above that are most appropriate for site conditions. The plan shall also explain how the measure or measures selected are applicable and appropriate for site conditions. In addition, the plan shall be revised as needed to reflect any changing conditions at the source.
  - (4) The operations and maintenance plan shall also describe the measures the Permittee will use to minimize fugitive dust emissions from piles of clinkers, such as accidental spillage, that are not part of open clinker storage piles.
  - (5) Temporary piles of clinker that result from accidental spillage or clinker storage cleaning operations shall be cleaned up within 3 days.
- e. Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

[40 CFR 63.1347(b)]
- f. *At all times, the Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.* Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR 63.1348(d) and A.A.C. R18-2-331.A.3. b & c]  
[Material permit conditions are indicated by underline and italics]

## 2. General Monitoring Requirements

- a. General requirements for Continuous Monitoring Systems
  - (1) The Permittee shall demonstrate compliance with the monitoring requirements in this Section on a continuous basis.

[40 CFR 63.1350(a)(1)]
  - (2) For each existing unit that is equipped with a CMS, the Permittee shall maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.

[40 CFR 63.1350(a)(3)]
  - (3) Any instance where the Permittee fails to comply with the continuous monitoring requirements of this section shall be a

violation.

[40 CFR 63.1350(a)(4)]

- (4) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

[40 CFR 63.1348(b)(1)(ii)]

- (5) The Permittee may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

[40 CFR 63.1348(b)(1)(iii)]

b. General Requirements for Parametric Monitoring Requirements

- (1) *For any operating limit in this Section that requires use of CPMS, the Permittee shall install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the following procedures.*

[40 CFR 63.1350(m)(1) to (4), A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- (a) The CPMS shall complete a minimum of one cycle of operation for each successive 15-minute period. The Permittee shall have a minimum of four successive cycles of operation to have a valid hour of data.
- (b) The Permittee shall conduct all monitoring in continuous operation at all times that the unit is operating.
- (c) The Permittee shall determine the 1-hour block average of all recorded readings.
- (d) The Permittee shall record the results of each inspection, calibration, and validation check
- (2) In addition to the above, the Permittee shall comply with specific parametric requirements under 40 CFR 63.1350(m)(5) through (11), as applicable.

[40 CFR 63.1350(m)(5) to (11)]

c. General Requirements for Continuous Flow Rate Monitoring Systems

The Permittee shall install, operate, calibrate, and maintain instruments, according to the following requirements for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere from sources subject to an emissions limitation that has a pounds per ton of clinker unit and that is required to be monitored by a CEMS

[40 CFR 63.1350(n), A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- (1) The Permittee shall install each sensor of the flow rate monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the mercury CEMS, taking into account the manufacturer's recommendations. The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.
- (2) The flow rate monitoring system shall be designed to measure the exhaust flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust flow rate.
- (3) The flow rate monitoring system shall be equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in (2) above.
- (4) The signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system shall be compatible with the output signal of the flow rate sensors used in the monitoring system.
- (5) The flow rate monitoring system shall be designed to complete a minimum of one cycle of operation for each successive 15-minute period.
- (6) The flow rate sensor shall have provisions to determine the daily zero and upscale calibration drift (CD) (Refer to Sections 3.1 and 8.3 of Performance Specification 2 in Appendix B to 40 CFR Part 60).
  - (a) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span).
  - (b) The absolute value of the difference between the flow monitor response and the reference signal shall be equal to or less than 3 percent of the flow monitor span.
- (7) The Permittee shall perform an initial relative accuracy test of the flow rate monitoring system according to Section 8.2 of Performance Specification 6 of Appendix B to 40 CFR Part 60 with the following exceptions:

- (a) The relative accuracy test is to evaluate the flow rate monitoring system alone rather than a continuous emission rate monitoring system.
    - (b) The relative accuracy of the flow rate monitoring system shall be no greater than 10 percent of the mean value of the reference method data.
  - (8) The Permittee shall verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in (7) above.
  - (9) The Permittee shall operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).
- d. The Permittee may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards of 40 CFR 63 Subpart LLL subject to the provisions of 40 CFR 63.1350(o)(1) through (6).  
[40 CFR 63.1350(o)]
- e. Development and Submittal of Monitoring Plans
- If the Permittee demonstrates compliance with any applicable emissions limit through performance stack testing or other emissions monitoring, the Permittee shall develop a site-specific monitoring plan according to the requirements in 40 CFR 63.1350(p). This requirement also applies the Permittee petitions the EPA Administrator for alternative monitoring parameters under 40 CFR 63.1350(o) and 40 CFR 63.8(f).  
[40 CFR 63.1350(p)]

3. Startup and Shutdown Requirements

The Permittee shall meet the following requirements during startup and shutdown:

- a. During startup the Permittee shall use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1200 degrees Fahrenheit.  
[40 CFR 63.1346(g)(1)]
- b. Combustion of the primary kiln fuel shall commence once the kiln temperature reaches 1200 degrees Fahrenheit.  
[40 CFR 63.1346(g)(2)]
- c. All dry sorbent and activated carbon systems that control hazardous air

pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

[40 CFR 63.1346(g)(3) and 40 CFR 63.1348(b)(9)]

- d. The Permittee shall keep records as specified in Condition III.D.7 during periods of startup and shutdown.

[40 CFR 63.1346(g)(4)]

#### 4. General Performance Testing Requirements

##### a. Initial Performance Test

The Permittee shall demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in this Section. The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30<sup>th</sup> consecutive operating day. The source has the option of performing the compliance test earlier than the compliance date if desired.

[40 CFR 63.1348(a)]

- b. Performance tests shall be conducted under such conditions as the Director specifies to the Permittee based on representative performance of the affected source for the period being tested. Upon request, the Permittee shall make available to the Director such records as may be necessary to determine the conditions of performance tests. The Permittee shall make available to the Director prior to testing, if requested, the site-specific test plan to be followed during performance testing.

[40 CFR 63.1349(a) and (e)]

- c. Performance test results shall be documented in complete test reports that contain the following information, as well as all other relevant information. As described in 40 CFR 63.7(c)(2)(i), the site-specific plan to be followed during performance testing must be made available to the Director prior to testing, if requested.

[40 CFR 63.1349(a)]

- (1) A brief description of the process and the air pollution control system;
- (2) Sampling location description(s);

- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations;
- (9) All data recorded and used to establish parameters for monitoring; and
- (10) Any other information required by the performance test method.

d. Changes in Operations

- (1) If the Permittee plans to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value, the Permittee shall conduct a performance test as specified for that standard in this permit.

[40 CFR 63.1348(c)(1)]

- (2) In preparation for and while conducting a performance test, the Permittee may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the following conditions are met. The Permittee shall submit temperature and other monitoring data that are recorded during the pretest operations.

[40 CFR 63.1348(c)(2)]

- (a) The Permittee shall provide the Director written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. The notice shall include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test, including when the planned operational change period would begin.
- (b) The performance test results shall be documented in a test report according to Condition III.D.4.c above.
- (c) A test plan shall be made available to the Director prior to performance testing, if requested.

- (d) The performance test shall be completed within 360 hours after the planned operational change period begins.
- e. The Permittee shall submit the information specified the following information no later than 60 days following the initial performance test. All reports shall be signed by the responsible official.  
[40 CFR 63.1349(d)(1)]
  - (1) The initial performance test data; and
  - (2) The values for the site-specific operating limits or parameters established, as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test.
- f. Within 60 days after the date of completing each performance evaluation or test, as defined in 40 CFR 63.2, conducted to demonstrate compliance with any standards under 63 Subpart LLL, the Permittee shall submit the relative accuracy test audit data and performance test data, except opacity data, to EPA by successfully submitting the data electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT). (See <https://www3.epa.gov/ttn/chief/ert/index.html>)  
[40 CFR 63.1349(d)(2)]
- g. Performance test frequency  
  
Except as provided in 40 CFR 63.1348(b), performance tests are required at regular intervals for affected sources that are subject to a dioxin, organic HAP or HCl emissions limit. Performance tests required every 30 months must be completed between 29 and 31 calendar months after the previous performance test except where that specific pollutant is monitored using CEMS; performance tests required every 12 months must be completed no more than 13 calendar months after the previous performance test.  
[40 CFR 63.1349(c)]

5. Notification requirements

The Permittee shall comply with the notification requirements in 40 CFR 63.9 as follows:

[40 CFR 63.1353(b)]

- a. Initial notifications as required by 40 CFR 63.9(b) through (d).
- b. Notification of performance tests, as required by 40 CFR 63.7 and 63.9(e).
- c. Notification of opacity and visible emission observations required by 40 CFR 63.1349 in accordance with 40 CFR 63.6(h)(5) and 63.9(f).
- d. Notification, as required by 40 CFR 63.9(g), of the date that the continuous emission monitor performance evaluation required by 40 CFR 63.8(e) is scheduled to begin.
- e. Notification of compliance status, as required by 40 CFR 63.9(h).

- f. Within 48 hours of an exceedance that triggers retesting to establish compliance and new operating limits, notify the Director of the planned performance tests. The notification requirements of 40 CFR 63.7(b) and 63.9(e) do not apply to retesting required for exceedances under 40 CFR 63 Subpart LLL.

6. Reporting Requirements

- a. The Permittee shall comply with the reporting requirements specified in 40 CFR 63 subpart A as follows:

[40 CFR 63.1354(b)]

- (1) As required by 40 CFR 63.10(d)(2), the Permittee shall report the results of performance tests as a part of the notification of compliance status.

[40 CFR 63.1354(b)(1)]

- (2) As required by 40 CFR 63.10(d)(3), the Permittee shall report the opacity results from tests required by 40 CFR 63.1349. [40 CFR 63.1354(b)(2)]

- (3) As required by 40 CFR 63.10(d)(4), the Permittee who is required to submit progress reports as a condition of receiving an extension of compliance under 40 CFR 63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

[40 CFR 63.1354(b)(3)]

- (4) As required by 40 CFR 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.

[40 CFR 63.1354(b)(6)]

- (5) As required by 40 CFR 63.10(e)(2), the Permittee using a continuous opacity monitoring system to determine opacity compliance during any performance test required under 40 CFR 63.7 and described in 40 CFR 63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under 40 CFR 63.8(e).

[40 CFR 63.1354(b)(7)]

- (6) As required by 40 CFR 63.10(e)(3), the Permittee equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

[40 CFR 63.1354(b)(8)]

- (7) The Permittee shall submit a summary report semiannually to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)).) The Permittee shall



use the appropriate electronic report in CEDRI. Instead of using the electronic report in CEDRI, the Permittee may submit an alternate electronic file consistent with the extensible markup language (XML) schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to 40 CFR Subpart LLL is not available in CEDRI at the time that the report is due, the Permittee must submit the report the Administrator at the appropriate address listed in 40 CFR 63.13. The Permittee must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. The reports must be submitted by the deadline specified in 40 CFR 63 Subpart LLL, regardless of the method in which the reports are submitted. The report must contain the information specified in 40 CFR 63.10(e)(3)(vi). In addition, the summary report shall include:

[40 CFR 63.1354(b)(9)]

- (a) All exceedances of maximum control device inlet gas temperature limits specified in Condition III.H.1;
- (b) Notification of any failures to calibrate thermocouples and other temperature sensors as required under Condition III.H.2.a(1)(c); and
- (c) Notification of any failures to maintain the activated carbon injection rate, and the activated carbon injection carrier gas flow rate or pressure drop, as applicable, as required under Condition III.H.1.b.
- (d) Notification of failure to conduct any combustion system component inspections conducted within the reporting period as required under Condition III.D.1.c(3).
- (e) Any and all failures to comply with any provision of the operation and maintenance plan developed in accordance with Condition V.C.1.b.
- (f) For each PM CPMS, HCl, Hg, and THC CEMS, D/F temperature monitoring system, or Hg sorbent trap monitoring system, within 60 days after the reporting periods, the Permittee shall report all of the calculated 30-operating day rolling average values derived from the CPMS, CEMS, CMS, or Hg sorbent trap monitoring systems.
- (g) In response to each deviation from an emissions standard or established operating parameter limit, the date, duration and description of each deviation and the specific actions taken for each deviation including inspections, corrective actions and repeat performance tests and the results of those actions.
- (h) Within 60 days after the date of completing each CEMS

performance evaluation test as defined in 40 CFR 63.2, the Permittee shall submit relative accuracy test audit (RATA) data to the EPA's CDX by using CEDRI in accordance with Condition V.C.6.a(7) above. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the Permittee must submit the results of the performance evaluation to the Administrator at the appropriate address listed in 40 CFR 63.13.

- (i) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.
  - (j) All reports required by this subpart not subject to the requirements in Condition III.D.6.a(7) introductory text and Condition III.D.6.a(7)(i) above must be sent to the Administrator at the appropriate address listed in 40 CFR 63.13. The Administrator or the Director may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to Condition III.D.6.a(7) introductory text and III.D.6.a(7)(i) above in paper format.
- (8) If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is ten percent or greater of the total operating time for the reporting period, the owner or operator shall submit an excess emissions and continuous monitoring system performance report along with the summary report.

[40 CFR 63.1354(b)(10)]

- b. For each failure to meet a standard or emission limit caused by a malfunction at an affected source, the Permittee shall report the failure in the semiannual compliance report required in III.D.6.a(7) above. The report shall contain the date, time and duration, and the cause of each event (including unknown cause, if applicable), and a sum of the number of events in the reporting period. The report shall list for each event the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the emission limit for which the source failed to meet a standard, and a description of the method used to estimate the

emissions. The report shall also include a description of actions taken by the Permittee during a malfunction of an affected source to minimize emissions in accordance with Condition V.C.1.g, including actions taken to correct a malfunction.

[40 CFR 63.1354(c)]

7. Recordkeeping requirements

- a. The Permittee shall maintain files of all information (including all reports and notifications) required by this section recorded in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

[40 CFR 63.1355(a)]

- b. The Permittee shall maintain records for each affected source as required by 40 CFR 63.10(b)(2) and (b)(3); and

[40 CFR 63.1355(b)]

- (1) All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9;
- (2) All records of applicability determination, including supporting analyses; and
- (3) If the Permittee has been granted a waiver under 40 CFR 63.8(f)(6), any information demonstrating whether the Permittee is meeting the requirements for a waiver of recordkeeping or reporting requirements.

- c. In addition to the recordkeeping requirements in b above, the Permittee shall maintain all records required by 40 CFR 63.10(c) for the continuous monitoring systems.

[40 CFR 63.1355(c)]

- d. The Permittee shall keep records of the date, time and duration of each startup or shutdown period for any affected source that is subject to a standard during startup or shutdown that differs from the standard applicable at other times, and the quantity of feed and fuel used during the startup or shutdown period.

[40 CFR 63.1355(f)]

- e. The Permittee shall records of the date, time and duration of each malfunction that causes an affected source to fail to meet an applicable standard; if there was also a monitoring malfunction, the date, time and duration of the monitoring malfunction; the record must list the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the standard for which the source failed to

meet a standard, and a description of the method used to estimate the emissions.

[40 CFR 63.1355(g)(1)]

- f. The Permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with Condition V.C.1.g including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR 63.1355(g)(2)]

- g. For each exceedance from an emissions standard or established operating parameter limit, the Permittee shall keep records of the date, duration and description of each exceedance and the specific actions taken for each exceedance including inspections, corrective actions and repeat performance tests and the results of those actions.

[40 CFR 63.1355(h)]

## E. Clinker Production

### 1. Monitoring Requirements

The Permittee shall determine hourly clinker production by one of following two methods:

- a. *The Permittee shall install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy.*

[40 CFR 63.1350(d)(1)(i) and A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- b. *The Permittee shall install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed shall be maintained within ±5 percent accuracy.* The Permittee shall calculate the hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. The Permittee shall update this ratio monthly. If this ratio changes at clinker reconciliation, the Permittee shall use the new ratio going forward, but the Permittee shall not have to retroactively change clinker production rates previously estimated.

[40 CFR 63.1350(d)(1)(ii) and A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

### 2. Recordkeeping Requirements

- a. During each quarter of the operation, the Permittee shall determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production or feed mass flow rates.

[40 CFR 63.1350(d)(2)]

- b. The Permittee shall maintain records of hourly kiln feed rates and hourly clinker production rates.

[40 CFR 63.1348(b)(1)(iv), 40 CFR 63.1350(d)(3)]

- c. The Permittee shall keep records of the daily clinker production rates and kiln feed rates.

[40 CFR 63.1355(e)]

**F. Particulate Matter Requirements**

**1. Monitoring Requirements**

- a. The Permittee shall install, operate, calibrate, and maintain instruments for continuously measuring and recording the stack gas flow rate for Kiln 4 stack S-401, clinker cooler stack S-402 and coal mill stack S-453 in accordance with the requirements in Condition III.D.2.c of this Attachment to allow determination of the PM mass emission rate to the atmosphere in pounds per ton of clinker.

[40 CFR 63.1350(n), A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- b. Instead of installing and operating stack gas flow rate on measurement instrument on coal mill stack, the Permittee may use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns that exhaust kiln gases to a coal mill that exhausts through a separate stack, the Permittee shall use the results of the initial and subsequent performance test to demonstrate compliance with the emissions limit.

[40 CFR 63.1349(a), A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- c. The Permittee shall install, operate, calibrate, and maintain PM CPMS on the Kiln 4 stack S-401 and clinker cooler stack S-402 to demonstrate continuous compliance with the established operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit.

[40 CFR 63.1349(b)(1)(i), 40 CFR 63.1350(b)(1)(i), A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- (1) The PM CPMS shall provide a 4-20 milliamp or digital signal output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamperes or the monitor's digital equivalent.
- (2) The PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to three times your allowable emission limit. If the PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to three times the allowable emission limit.
- (3) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamperes or digital output values from the

PM CPMS for the periods corresponding to the compliance test runs (e.g., average all the PM CPMS output values for three corresponding Method 5I test runs).

- d. To determine continuous operating compliance, the Permittee shall record the PM CPMS output data for all periods when the process is operating, and use all the PM CPMS data for calculations when the source is not out-of-control. The Permittee shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps or the digital equivalent) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. The Permittee shall use Equation 7 in 40 CFR 63.1349(b)(1)(v) to calculate 30 operating day average.

[40 CFR 63.1349(b)(1)(v), 40 CFR 63.1350(b)(1)(ii)]

- e. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, the Permittee shall:

[40 CFR 63.1350(b)(1)(iii)]

- (1) Within 48 hours of the exceedance, visually inspect the APCD;
- (2) If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
- (3) Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. The Permittee are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.

- f. PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a presumptive violation of 40 CFR 63 Subpart LLL.

[40 CFR 63.1350(b)(1)(iv)]

## 2. Performance Test Requirements

- a. The Permittee shall demonstrate initial compliance with the PM emissions standards by conducting a performance test on the Kiln 4 stack S-401, Coal Mill stack S-453 and Clinker Cooler stack S-402 using Method 5 or Method 5I at Appendix A-3 to 40 CFR Part 63. The Permittee shall conduct separate performance tests while the raw mill is under normal operating conditions and while the raw mill is

not operating.

[40 CFR 63.1348(a)(1), 40 CFR 63.1349(b)(1)]

- b. During the initial or subsequent performance tests on the Kiln 4 stack S-401 and Clinker Cooler stack S-402, the Permittee shall establish the operating limit for the PM CPMS in accordance with following procedures.

[40 CFR 63.1349(b)(1)(ii)]

- (1) If the average of the three Method 5 or 5I compliance test runs is below 75 percent of the PM emission limit, the Permittee shall calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or 5I compliance test with the procedures in 40 CFR 63.1349(b)(1)(iii)(A) through (D).

[40 CFR 63.1349(b)(1)(iii)]

- (2) If the average of the three PM compliance test runs is at or above 75 percent of the PM emission limit, the Permittee shall determine the operating limit by averaging the PM CPMS milliamp or digital equivalent output corresponding to the three PM performance test runs that demonstrate compliance with the emission limit using Equation 6 in 40 CFR 63.1349(b)(1)(iv).

[40 CFR 63.1349(b)(1)(iv)]

- c. The Permittee shall repeat the performance tests annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test. The Permittee shall also repeat the test if there is a change the analytical range of the instrument, or if the instrument or any principle analytical component of the instrument, that would alter the relationship of output signal to in-stack PM concentration, is replaced.

[40 CFR 63.1350(b)(1)(i), 40 CFR 63.1349(b)(1)(i)]

- d. For each performance test, conduct at least three separate test runs each while the mill is on and the mill is off, under the conditions that exist when the affected source is operating at the level reasonably expected to occur. The Permittee shall conduct each test run to collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit. The Permittee shall calculate the time weighted average of the results from three consecutive runs, including applicable sources as required by Condition III.F.2.e below to determine compliance. The Permittee need not determine the particulate matter collected in the impingers ("back half") of the Method 5 or Method 5I particulate sampling train to demonstrate compliance with the PM standards. This shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.

[40 CFR 63.1349(b)(1)(vi)]

- e. For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (*e.g.* beta attenuation), span of the instruments primary analytical range, milliamp value or digital equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp or digital equivalent signals corresponding to each PM compliance test run.

[40 CFR 63.1349(b)(1)(vii)]

- f. The kiln stack and coal mill stack shall be tested simultaneously and the combined emission rate of PM from the kiln and coal mill shall be computed for each run using the following equation.

[40 CFR 63.1349(b)(1)(viii)]

$$E_{C_m} = \frac{E_K + E_B + E_C}{P}$$

Where:

$E_{C_m}$  = Combined hourly emission rate of PM from the kiln stack and inline coal mill, lb/ton of kiln clinker production.

$E_K$  = Hourly emissions of PM emissions from the kiln, lb.

$E_B$  = Hourly emissions of the alkali bypass stack, lb.

$E_C$  = Hourly PM emissions from the in-line coal mill stack, lb.

$P$  = Hourly clinker production, tons.

- g. The Permittee shall demonstrate initial compliance with the PM emission limit by conducting separate performance tests while the raw mill is under normal operating conditions and while the raw mill is not operating, and calculate the time weighted average emissions. The operating limit will then be determined using Condition III.F.2.c above.

[40 CFR 63.1349(b)(1)(ix)]

## G. Opacity Requirements

### 1. Monitoring Requirements

- a. Opacity Monitoring for raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, raw material dryer and bulk loading or unloading system.

[40 CFR 63.1350(f)(1)]

- (1) The Permittee shall conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A-7 to 40 CFR 60. The performance test must be conducted while the affected source is in operation.



- (2) If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
- (3) If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
- (4) If visible emissions are observed during any Method 22 performance test, the Permittee shall conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.
- (5) The requirements to conduct Method 22 visible emissions monitoring do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.
- (6) If any partially enclosed or unenclosed conveying system transfer point is located in a building, the Permittee shall conduct a Method 22 performance test according to the requirements of (1) through (4) above for each such conveying system transfer point located within the building, or for the building itself, according to (7) below.
- (7) If visible emissions from a building are monitored, the requirements of conditions (1) through (4) above apply to the monitoring of the building, and, the Permittee must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

**b. Opacity Monitoring for Raw or Finish Mills**

[40 CFR 63.1350(f)(2)]

- (1) The Permittee shall monitor opacity by conducting daily visual emissions observations of the mill sweep and air separator particulate matter control devices (PMCD) of the raw or finish mills in accordance with the procedures of Method 22 of Appendix A–7 to 40 CFR 60. The duration of the Method 22

performance test shall be 6 minutes.

- (2) Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, the Permittee shall conduct a follow up Method 22 performance test of each stack from which visible emissions were observed during the previous Method 22 performance test.
  - (3) If visible emissions are observed during the follow-up Method 22 performance test from any stack from which visible emissions were observed during the previous Method 22 performance test, the Permittee shall conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of Appendix A-4 to part 60 of this chapter. The duration of the Method 9 test shall be 30 minutes.
- c. If visible emissions are observed during any Method 22 visible emissions test conducted under Conditions III.G.1.a or b above, the Permittee shall initiate, within one-hour, the corrective actions specified in the operation and maintenance plan in Condition III.D.1.c.  
[40 CFR 63.1350(f)(3)]
- d. As an alternative to the requirements in Condition III.G.1.b above, the raw mill or finish mill may be equipped with a continuous opacity monitoring system (COMS) or bag leak detection system (BLDS).  
[40 CFR 63.1350(f)(4)]
- (1) If the Permittee chooses to install a COMS in lieu of conducting the daily visual emissions testing, the Permittee shall install, calibrate, maintain, and continuously operate the COMS at the outlet of the PM control device of the raw mill or finish mill in accordance with the requirements in subpart A of 40 CFR Part 63 and PS-1 of Appendix B to 40 CFR Part 60.  
[40 CFR 63.1350(f)(4)(i), A.A.C. R18-2-331.A.3.c]  
[Material permit conditions are indicated by underline and italics]
  - (2) If the Permittee choose to install a BLDS in lieu of conducting the daily visual emissions testing, the Permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system in accordance with the requirements in 40 CFR 63.1350(m)(10) and (11).  
[40 CFR 63.1350(f)(4)(ii), A.A.C. R18-2-331.A.3.c]  
[Material permit conditions are indicated by underline and italics]

## 2. Compliance and Performance Testing Requirements

- a. The Permittee shall conduct an initial performance test to demonstrate compliance with the opacity emissions standards by using the performance test methods and procedures given below. The maximum 6-minute average opacity exhibited during the performance test period shall be used to determine whether the affected source is in compliance with the standard.

[40 CFR 63.1348(a)(2)]

- (1) The Permittee shall conduct opacity tests in accordance with Method 9 of Appendix A-4 to 40 CFR 60. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if

[40 CFR 63.1349(b)(2)]

- (a) There are no individual readings greater than 10 percent opacity;

- (b) There are no more than three readings of 10 percent for the first 1-hour period

- (2) For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

[40 CFR 63.1349(b)(2)]

- b. The Permittee shall demonstrate continuous compliance with the opacity standards by complying with the monitoring requirements in Condition III.G.1,

[40 CFR 63.1348(b)(3)]

## **H. Dioxins and Furan Requirements**

### **1. Operating Limitations**

- a. The Permittee shall operate Kiln 4 such that:

- (1) When In-Line Raw Mill RM-306 is operating, the flue temperature at the inlet to DC-431 shall not exceed the applicable exhaust temperature limit determined in accordance with Condition III.H.3.a(4) of this Attachment and established during the performance test when the raw mill was operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent.

[40 CFR 63.1346(a)(1), 63.1346(b)]

- (2) When In-Line Raw Mill RM-306 is not operating, the flue temperature at the inlet to DC-431 does not exceed the applicable exhaust temperature limit determined in accordance with Condition III.H.3.a(4) of this Attachment and established during the performance test when the raw mill was not operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent.

[40 CFR 63.1346(a)(2), 63.1346(b)]

- b. If the Permittee employs sorbent injection as an emission control technique for D/F control, the Permittee shall operate the sorbent injection system in accordance with the following Conditions:

- (1) The rolling three-hour rolling average activated sorbent injection rate must be equal to or greater than the sorbent injection rate determined in accordance with Condition III.H.3.a(4).

[40 CFR 63.1346(c)(1)]

- (2) The Permittee shall either:
- [40 CFR 63.1346(c)(2)]
- (a) Maintain the minimum activated carbon injection carrier gas flow rate, as a rolling three-hour rolling average, based on the manufacturer's specifications. These specifications shall be documented in the test plan developed in accordance with 40 CFR 63.7(c), or
  - (b) Maintain the minimum activated carbon injection carrier gas pressure drop, as a rolling three-hour rolling average, based on the manufacturer's specifications. These specifications shall be documented in the test plan developed in accordance with 40 CFR 63.7(c).
- (3) Except as provided in Condition (4) below, the Permittee shall specify and use the brand and type of sorbent used during the performance test until a subsequent performance test is conducted, unless the site-specific performance test plan contains documentation of key parameters that affect adsorption and the Permittee establishes limits based on those parameters, and the limits on these parameters are maintained.
- [40 CFR 63.1346(d)]
- (4) The Permittee may substitute, at any time, a different brand or type of sorbent provided that the replacement has equivalent or improved properties compared to the sorbent specified in the site-specific performance test plan and used in the performance test. The Permittee shall maintain documentation that the substitute sorbent will provide the same or better level of control as the original sorbent.
- [40 CFR 63.1346(e)]

## 2. Monitoring Requirements

### a. Temperature Monitoring Requirements

- (1) The Permittee shall calibrate, maintain, and operate a continuous monitoring system (CMS) to record the temperature of the exhaust gases from the Kiln 4 at the inlet to, or upstream of, the in-line raw mill PM control device DC-431.
- [40 CFR § 63.1350(g)(1) and A.A.C. R18-2-331.A.3.c]  
[Material Permit Conditions are indicated with underline and italics]
- (a) The temperature recorder response range shall include zero and 1.5 times the average temperature established according to the requirements in Condition III.H.3.a(4).
  - (b) The calibration reference for the temperature measurement shall be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

- (c) The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.
  - (2) The Permittee shall monitor and continuously record the temperature of the exhaust gases from the Kiln 4/In-Line Raw Mill at the inlet to the In-Line Raw Mill PM control device DC-431.  
[40 CFR § 63.1350(g)(2)]
  - (3) The required minimum data collection frequency shall be one minute.  
[40 CFR 63.1350(g)(3)]
  - (4) The Permittee shall calculate the three-hour average temperature using the average of 180 successive one-minute average temperatures.  
[40 CFR 63.1350(g)(4)]
  - (5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average temperature shall begin anew, without considering previous recordings.  
[40 CFR 63.1350(g)(5)]
- b. Additional Monitoring Requirements When Using Sorbent Injection for D/F Control
- (1) Monitoring of Activated Carbon Injection Rate  
  
*The Permittee shall install, calibrate, operate and maintain a continuous monitor to record the rate of activated carbon injection in accordance with the requirements in 40 CFR 60.1350(m)(9). The accuracy of the rate measurement device must be  $\pm 1$  percent of the rate being measured.*  
[40 CFR 63.1350(h)(1) and A.A.C. R18-2-331.A.3.c]  
[Material Permit Conditions are indicated with underline and italics]
  - (a) The Permittee shall verify the calibration of the device at least once every three months.
    - (b) Each hour, the Permittee shall calculate the three-hour rolling average activated carbon injection rate for the previous three hours of process operation.
    - (c) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average activated carbon injection rate shall begin anew, without considering previous recordings.
  - (2) Monitoring of Carrier Gas Parameter
    - (a) *The Permittee shall install, calibrate,* operate and

maintain a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop).

[40 CFR 63.1350(h)(2)(i), 40 CFR 63.1349(b)(3)(v)(C) & A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- (i) If the carrier gas flow rate is used, the Permittee shall determine, record, and maintain a record of the accuracy of the carrier gas flow rate monitoring system according to the procedures in Appendix A to part 75 of this chapter.
- (ii) If the carrier gas pressure drop is used, the Permittee shall determine, record, and maintain a record of the accuracy of the carrier gas pressure drop monitoring system in accordance with 40 CFR 63.1350(m)(6).
- (b) The Permittee shall calculate each hour the three-hour rolling average of the selected parameter value for the previous 3 hours of process operation using all of the one-minute data available (i.e., the CMS is not out-of-control.)  
[40 CFR 63.1350(h)(2)(ii)]

### 3. Performance Test Requirements

- a. The Permittee shall conduct performance tests on the Kiln 4 S-401 using Method 23 of Appendix A-7 to 40 CFR 60.

[40 CFR 63.1349(b)(3)]

- (1) Each performance test shall consist of three separate runs conducted under representative conditions. The duration of each run shall be at least 3 hours, and the sample volume for each run must be at least 2.5 dscm (90 dscf).
- (2) The temperature at the inlet to the Kiln 4 PMCD shall be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) shall be included in the performance test report.
- (3) Average temperatures shall be calculated for each run of the performance test.
- (4) The run average temperature shall be calculated for each run, and the average of the run average temperatures shall be determined and included in the performance test report and shall determine the applicable temperature limits in Condition III.H.1.a.

- b. Additional Requirements for Sorbent Injection

[40 CFR 63.1349(b)(3)(v) and (vi)]

- (1) If sorbent injection is used for D/F control, the Permittee shall record the rate of sorbent injection to the kiln exhaust

continuously during the period of the Method 23 test in accordance with the Condition III.H.2.b(1), and include the continuous injection rate record(s) in the performance test report. The Permittee shall calculate the run average sorbent injection rate for each run. The Permittee shall determine the applicable injection rate limit in accordance with Condition III.H.1.b(1) by calculating the average of the three run average injection rates. The Permittee shall include the run average sorbent injection rate for each run, and the average of 3 test runs in the performance test report. The Permittee shall include the brand and type of sorbent used during the performance test in the performance test report.

- (2) The Permittee shall maintain a continuous record of the carrier gas parameter (flow rate or pressure drop) for the duration of the performance test. The Permittee shall develop the carrier gas parameter during the initial performance test and update during any subsequent performance test.

- c. The Permittee shall repeat the performance every 30 months. The performance test shall be completed between 29 and 31 calendar months after the previous performance test.

[40 CFR 63.1349(c)]

#### 4. Compliance Requirements

- a. The Permittee shall demonstrate initial compliance with the D/F emissions standards by using the performance test methods and procedures in Condition III.H.3.a, and by conducting separate performance tests while the raw mill is operating and the raw mill is not operating. The Permittee shall determine the D/F TEQ concentration for each run and calculate the arithmetic average of the TEQ concentrations measured for the three runs to determine continuous compliance.

[40 CFR 63.1348(a)(3)(i)]

- b. The Permittee shall demonstrate compliance with the temperature operating limits specified in Condition III.H.1.a by using the performance test methods and procedures in Conditions III.H.3.a.

[40 CFR 63.1348(a)(3)(ii)]

- c. If activated carbon injection is used the Permittee shall demonstrate compliance with the activated carbon injection rate operating limits specified in Condition III.H.1.b by using the performance test methods and procedures in Condition III.H.3.b(1).

[40 CFR 63.1348(a)(3)(iii)]

- d. If activated carbon injection is used, the Permittee shall demonstrate compliance with the carrier gas parameter by maintaining it within  $\pm 5$  percent of the value established during the performance test.

[40 CFR 63.1348(a)(3)(iv)]

## I. THC Requirements

### 1. Monitoring Requirements

## a. THC Monitoring requirements

- (1) The Permittee shall install, operate, and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to 40 CFR Part 60 and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of 40 CFR Part 63. The Permittee shall operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in 40 CFR Part 60. For THC continuous emission monitoring systems certified under Performance Specification 8A, the Permittee shall conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR Part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2.

[40 CFR 63.1350(i)(1) & A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- (a) Kiln Stack S-401
- (b) Coal Mill Stack S-453
- (c) Raw Mill DC-301
- (d) Swing Mill DC302 when used for raw material grinding
- (2) Instead of installing a CEMS on the coal mill stack S-453, the Permittee may use the results of the initial or subsequent performance test to demonstrate compliance with the THC emission limit. The THC shall be measured either upstream of the coal mill or coal mill stack.

[40 CFR § 63.1349(a), 40 CFR § 63.1349(b)(4)(iv)]

- (3) For the purposes of conducting the accuracy and quality assurance evaluations for CEMS, the THC span value (as propane) is 50 ppmvw and the reference method (RM) is Method 25A of Appendix A to 40 CFR Part 60.

[40 CFR § 63.1349(b)(4)(i)]

- (4) If the Permittee is complying with the total organic HAP emissions limits, the Permittee shall continuously monitor THC according to Condition III.I.1.a(1) above in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to 40 CFR Part 60 and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of 40 CFR Part 63. The Permittee shall operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in 40 CFR Part 60.

[40 CFR § 63.1350(j)]



- b. To determine continuous compliance with the THC operating limit, the Permittee shall record the THC CEMS output data for all periods when the process is operating and the THC CEMS is not out-of-control. The Permittee shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the THC CEMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (ppmvw) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. The Permittee shall use Equation 16 to determine the 30 kiln operating day average.

[40 CFR § 63.1349(b)(7)(xi)]

$$30 - \text{Kiln Operating day average} = \frac{\sum_{i=1}^n H_{pvi}}{n}$$

Where:

$H_{pvi}$  = The hourly parameter value for hour i, ppmvw.

n = The number of valid hourly parameter values collected over 30-kiln operating days.

- c. If the THC level exceeds by 10 percent or more the site-specific THC emissions limit, the Permittee shall

[40 CFR § 63.1349(b)(7)(xiii)]

- (1) As soon as possible but no later than 30 days after the exceedance, conduct an inspection and take corrective action to return the THC CEMS measurements to within the established value; and
- (2) Within 90 days of the exceedance or at the time of the 30 month compliance test, whichever comes first, conduct another performance test to determine compliance with the organic HAP limit and to verify or re-establish the site-specific THC emissions limit.

## 2. Compliance and Performance Testing Requirements

### a. THC Emission Test

- (1) The Permittee shall demonstrate initial compliance with the emission standards by using THC CEMS to conduct the initial compliance test for the first 30 kiln operating days of kiln operation after September 9, 2015.

[40 CFR 63.1348(a)(4)(i) and 63.1349(b)(4)(ii)]

- (2) If no CEMS are installed on the coal mill, the Permittee shall conduct performance test on coal mill stack using Method 25A in Appendix A to 40 CFR Part 60 and repeated every 30 months.

[40 CFR § 63.1349(a) and 40 CFR 63.1350(i)(2)]

- (3) The Permittee shall calculate a kiln-specific THC limit using the following equation:

[40 CFR § 63.1349(b)(4)(iii)]

$$C_{ks} = \frac{MACTLimit \times (Q_{ks} + Q_{cm}) - (Q_{cm} \times C_{cm})}{Q_{ks}}$$

Where:

$C_{ks}$  = Kiln stack concentration (ppmvd)

$Q_{cm}$  = Coal mill flow rate (volume /hr)

$C_{cm}$  = Coal mill concentration (ppmvd)

$Q_{ks}$  = Kiln stack flow rate (volume /hr)

b. Total Organic HAP Emissions Tests

If the Permittee chooses to comply with total HAPs emission limit in lieu of the THC emission limit, the Permittee shall demonstrate compliance by conducting a performance test to determine total organic HAP emissions by following the procedures.

[40 CFR 63.1349(b)(4)(v), 1348(a)(4)(ii) and 63.1349(b)(7)]

- (1) The Permittee shall use Method 320 of appendix A to 40 CFR Part 63, Method 18 of Appendix A of part 60, ASTM D6348-03 or a combination to determine emissions of total organic HAP. Each performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with 40 CFR 63.7(e). Each run must be conducted for at least 1 hour.

[40 CFR § 63.1349(b)(7)(i)]

- (2) To demonstrate initial compliance, the Permittee shall conduct the separate performance tests as specified above while the raw mill kiln is operating and while the raw mill of the kiln is not operating. The time weighted average total organic HAP concentration measured during the separate initial performance test shall be used to determine initial compliance.

[40 CFR § 63.1348(a)(4)(iii) and 63.1348(a)(4)(iv)]

- (3) At the same time of conducting the performance test for total organic HAP, The Permittee shall also determine a site-specific THC emissions limit by operating a THC CEMS in accordance with the requirements of Condition III.I.1.a(4). The duration of the performance test shall be at least 3 hours and the average THC concentration (as calculated from the 1-minute averages) during the 3-hour test shall be calculated. The Permittee shall establish the THC operating limit and determine compliance with it according to 40 CFR § 63.1349(b)(7)(vii) and (viii). The Permittee may extend the testing time of the organic HAP performance test, if required, to adequately capture THC variability over time.

[40 CFR 63.1349(b)(7)(ii)]

- (4) For inline kiln/raw mill, the Permittee shall conduct separate performance tests while the raw mill is operating (“mill on”) and while the raw mill is not operating (“mill off”). Using the fraction of time the raw mill is on and the fraction of time that the raw mill is off, the Permittee shall calculate this limit as a weighted average of the THC levels measured during three raw mill on and three raw mill off compliance testing with the following equation:

[40 CFR 63.1349(b)(7)(iii) and (x), 63.1348(a)(4)(v)]

$$R = (y * t) + ((x * (1 - t))$$

Where:

R = Operating limit as THC, ppm<sub>vw</sub>

y = Average THC CEMS value during mill on operations, ppm<sub>vw</sub>

t = Percentage of operating time with mill on.

x = Average THC CEMS value during mill off operations, ppm<sub>vw</sub>.

(1-t) = Percentage of operating time with mill off.

- (5) The THC CEMS measurement scale shall be capable of reading THC concentrations from zero to a level equivalent to two times the highest THC emissions average determined during the performance test, including mill on or mill off operation. If the organic HAP emissions are below 75 percent of the organic HAP standard, the THC CEMS shall be calibrated and operated on a measurement scale no greater than 180 ppmvw, as carbon, or 60 ppmvw as propane. The Permittee may require the use of a dual range instrument.

[40 CFR § 63.1349(b)(7)(iv), 40 CFR § 63.1349(b)(7)(vi)]

- (6) For the inline coal mill with separate stack, the Permittee must measure and account for organic HAP emissions from the separate stack. The Permittee is required to measure organic HAP at the coal mill inlet or outlet and calculate a flow weighted average organic HAP concentration for all emission sources including the inline coal mill.

[40 CFR § 63.1349(b)(7)(v)]

## J. Mercury Requirements

### 1. Monitoring Requirements

*The Permittee shall install and operate a mercury continuous emissions monitoring system (Hg CEMS) on the Kiln Stack S-401 in accordance with Performance Specification 12A of Appendix B to 40 CFR Part 60 or in integrated solvent trap monitoring system in accordance with Performance Specification 12B of Appendix B to 40 CFR Part 60.*

[40 CFR § 63.1350(k), A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- a. The Permittee shall use a span value for any Hg CEMS that represents the mercury concentration corresponding to approximately two times the emissions standard rounded up to the nearest multiple of 5  $\mu\text{g}/\text{m}^3$  of total mercury or higher level if necessary to include Hg concentrations which may occur (excluding concentrations during in-line raw “mill off” operation). As specified in PS 12A, Section 6.1.1, the data recorder output range shall include the full range of expected Hg concentration values which would include those expected during “mill off” conditions. Engineering judgments made and calculations used to determine the corresponding span concentration from the emission standard shall be documented in the site-specific monitoring plan and associated records.  
[40 CFR § 63.1350(k)(1)]
- b. In order to quality assure data measured above the span value, the Permittee must use one of the three options in 40 CFR 63.1350(k)(2)(i) through (iii). Where these options are employed while the kiln is operating in a mill-off mode, the “above span” described in 40 CFR 63.1350(k)(2)(iii) may substitute for the daily upscale calibration provided the data normalization process in 40 CFR 63.1350(k)(2)(iii) are not required. If data normalization is required, the normal daily upscale calibration check must be performed to quality assure the operation of the CEMS for that day. In this particular case, adjustments to CEMS normally required by Procedure 5 when a daily upscale does not meet the 5 percent criterion are not required, unless 40 CFR 63.1350(k)(2)(iii) data normalization is necessary and a subsequent normal daily calibration check demonstrates the need for such adjustment.  
[40 CFR § 63.1350(k)(2)]
- c. The Permittee shall operate and maintain each Hg CEMS or an integrated sorbent trap monitoring system according to the quality assurance requirements in Procedure 5 of Appendix F to 40 CFR Part 60. During the RATA of integrated sorbent trap monitoring systems required under Procedure 5, the Permittee may apply the appropriate exception for sorbent trap section 2 breakthrough:  
[40 CFR § 63.1350(k)(3)]
- (1) For stack Hg concentrations  $>1 \mu\text{g}/\text{dscm}$ ,  $<10\%$  of section 1 mass;
  - (2) For stack Hg concentrations  $<1 \mu\text{g}/\text{dscm}$  and  $>0.5 \mu\text{g}/\text{dscm}$ ,  $<20\%$  of section 1 mass;
  - (3) For stack Hg concentrations  $<0.5 \mu\text{g}/\text{dscm}$  and  $>0.1 \mu\text{g}/\text{dscm}$ ,  $<50\%$  of section 1 mass; and
  - (4) For stack Hg concentrations  $<0.1 \mu\text{g}/\text{dscm}$ , no breakthrough criterion assuming all other QA/QC specifications are met.
- d. Relative accuracy testing of mercury monitoring systems under PS 12A, PS 12B, or Procedure 5 shall be conducted at normal operating conditions. The testing must occur with the raw mill on.  
[40 CFR § 63.1350(k)(4)]
- e. The Permittee shall install, calibrate, operate, and maintain an instrument

for continuously measuring and recording the Kiln 4 exhaust gas flow rate to the atmosphere according to the requirements in Condition III.D.2.c of this Attachment. The Permittee shall make appropriate moisture correction to the Kiln 4 exhaust gas flow rate.

[40 CFR 63.1350(k)(5), 40 CFR 63.1343(a) and A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- f. The Permittee shall account for the mercury emitted from coal mill stack by following the procedures below:

[40 CFR § 63.1350(k)(5)]

- (1) The Permittee shall develop a mercury hourly mass emissions rate by conducting performance tests annually, within 11 to 13 calendar months after the previous performance test, using Method 29, or Method 30B, to measure the concentration of mercury in the gases exhausted from the alkali bypass and coal mill.
- (2) On a continuous basis, the Permittee shall determine the mass emissions of mercury in lb/hr from the coal mill exhausts by using the mercury hourly emissions rate and the exhaust gas flow rate and hourly mercury emission rate to calculate hourly mercury emissions in lb/hr.
- (3) The Permittee shall sum the hourly mercury emissions from the kiln and coal mill to determine total mercury emissions, and using hourly clinker production, calculate the hourly emissions rate in pounds per ton of clinker to determine the 30 day rolling average.
- (4) If mercury emissions from the coal mill are below the method detection limit for two consecutive annual performance tests, the Permittee may reduce the frequency of the performance tests of coal mills to once every 30 months. If the measured mercury concentration exceeds the method detection limit, the Permittee must revert to testing annually until two consecutive annual tests are below the method detection limit.

- g. Mercury shall be measured either upstream of the coal mill or in the coal mill stack.

[40 CFR § 63.1348(b)(7)(ii)]

- h. If the Permittee operates an integrated sorbent trap monitoring system conforming to PS 12B, the Permittee may use a monitoring period at least 24 hours but no longer than 168 hours in length. The Permittee shall use a monitoring period that is a multiple of 24 hours (except during relative accuracy testing as allowed in PS 12B).

[40 CFR § 63.1350(k)(6)]

- i. If the Permittee uses an integrated sorbent trap Hg CEMS to determine ongoing compliance, the Permittee shall use the procedures described in Condition III.J.2.b to assign hourly mercury concentration values and to calculate rolling 30 operating data emissions rates. Since the Permittee assigns the mercury concentration measured with the sorbent trap to each

relevant hour respectively for each operating day of the integrated period, the Permittee may schedule the sorbent change periods to any time of the day (i.e., the sorbent trap replacement need not be scheduled at 12:00 midnight nor must the sorbent trap replacements occur only at integral 24-hour intervals).

[40 CFR § 63.1348(b)(7)(i)]

## 2. Compliance Requirements

- a. The Permittee shall demonstrate compliance by operating a mercury CEMS or a sorbent trap based CEMS. Initial Compliance with the mercury emissions standard shall be determined based on the first 30 operating days the Permittee operates a mercury CEMS or sorbent trap monitoring system after September 9, 2016 using the following equation.

[40 CFR § 63.1348(a)(5), 40 CFR § 63.1349(b)(5)]

$$E_{30D} = k \frac{\sum_{i=1}^n C_i Q_i}{P}$$

E30D = 30-day rolling emission rate of mercury, lb/MM tons clinker;

C<sub>i</sub> = Concentration of mercury for operating hour i, µg/scm;

Q<sub>i</sub> = Volumetric flow rate of effluent gas for operating hour i, where C<sub>s</sub> and Q<sub>s</sub> are on the same basis (either wet or dry), scm/hr;

K = Conversion factor, 1 lb/454,000,000 µg;

n = Number of kiln operating hours in a 30 kiln operating day period, n = 1 to 720.

P = 30 days of clinker production during the same time period as the mercury emissions measured, million tons.

- b. If the Permittee uses an integrating sorbent trap CEMS, the Permittee shall assign the average Hg emissions concentration determined for an integrating period (e.g., 7 day sorbent trap monitoring system sample) to each relevant hour of the kiln operating days spanned by each integrated sample and calculate the 30 kiln operating day emissions rate value using the assigned hourly Hg emissions concentrations and the respective flow and production rate values collected during the 30 kiln operating day performance test period. Depending on the duration of each integrated sampling period, the Permittee may not be able to calculate the 30 kiln operating day emissions value until several days after the end of the 30 kiln operating day performance test period.

For example, a sorbent trap monitoring system producing an integrated 7-day sample will provide Hg concentration data for each hour of the first 28 kiln operating days (i.e., four values spanning 7 days each) of a 30 operating day period. The Hg concentration values for the hours of the last 2 days of the 30 operating day period will not be available for calculating

the emissions for the performance test period until at least five days after the end of the subject period.

[40 CFR § 63.1348(a)(5)]

## K. HCl Requirements

### 1. Monitoring Requirements

- a. The Permittee shall operate HCl CEMS on the Kiln Stack S-401 and the coal mill stack S-453 in accordance to one of the following requirements:

- (1) The Permittee shall install, operate, maintain, and quality assure a HCl CEMS installed and certified under PS 15 according to the quality assurance requirements in Procedure 1 of Appendix F to 40 CFR Part 60 except that the Relative Accuracy Test Audit requirements of Procedure 1 shall be replaced with the validation requirements and criteria of sections 11.1.1 and 12.0 of PS 15.

[40 CFR 63.1350(l)(1), A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- (2) Alternatively, when promulgated, if the Permittee chooses to install and operate an HCl CEMS in accordance with PS 18 of appendix B to 40 CFR Part 60, the Permittee must operate, maintain and quality assure the HCl CEMS using the associated Procedure 6 of appendix F to 40 CFR Part 60. For any performance specification that the Permittee uses, the Permittee must use Method 321 of appendix A to 40 CFR Part 63 as the reference test method for conducting relative accuracy testing.

[40 CFR 63.1350(l)(1), A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- (3) The span value and calibration requirements in 40 CFR 63.1350(l)(1)(i) and (ii) shall apply to HCl CEMS other than those installed and certified under PS 15.

[40 CFR 63.1350(l)(1)]

- b. Instead of installing a CEMS on the coal mill stack, the Permittee may use the results of the initial or subsequent performance test to demonstrate compliance with the HCl emission limit. HCl shall be measured either upstream of the coal mill or coal mill stack.

[40 CFR § 63.1349(a), 40 CFR § 63.1348(b)(8)(iii)]

- c. For the sources equipped with wet or dry scrubber or tray tower, instead of HCl CEMS, the Permittee shall install, calibrate, operate and maintain CMS as per the following requirements:

[40 CFR 63.1350(l)(2), A.A.C. R18-2-331.A.3.c]

[Material Permit Conditions are indicated with underline and italics]

- (1) Requirements for Wet Scrubber/Tray Tower

The Permittee shall install, operate and maintain flow rate, pressure and/or pH measurement devices as per the requirements in 40 CFR 63.1350(m)(5), (6) and (7).

[40 CFR 63.1350(m)(5)]

(2) Requirements for Dry Scrubber

The Permittee shall install, operate and maintain the sorbent injection rate monitoring device as per the requirements in 40 CFR 63.1350(m)(9).

[40 CFR 63.1350(m)(9)]

- d. If the source is equipped with a wet or dry scrubber or tray tower, the Permittee may choose to monitor SO<sub>2</sub> emissions continuously according to the requirements of 40 CFR 60.63(e) through (f) of 40 CFR Part 60 subpart F. If SO<sub>2</sub> levels increase above the 30-day rolling average SO<sub>2</sub> operating limit established during the performance test, the Permittee shall:

[40 CFR 63.1350(l)(3)]

- (1) As soon as possible but no later than 48 hours after the Permittee exceed the established SO<sub>2</sub> value conduct an inspection and take corrective action to return the SO<sub>2</sub> emissions to within the operating limit; and

- (2) Within 60 days of the exceedance or at the time of the next compliance test, whichever comes first, conduct an HCl emissions compliance test to determine compliance with the HCl emissions limit and to verify or re-establish the SO<sub>2</sub> CEMS operating limit.

- e. As an alternative to Condition III.K.1.a above, the Permittee may demonstrate initial compliance by conducting a performance test using Method 321 of appendix A to 40 CFR 63. The Permittee shall also monitor continuous performance through use of an HCl CPMS according to 40 CFR § 63.1349 (b)(6)(v)(A) through (H). For kilns with inline raw mills, compliance testing and monitoring HCl to establish the site specific operating limit shall be conducted during both raw mill on and raw mill off conditions.

[40 CFR § 63.1349(b)(6)(v)]

2. Performance Test Requirements

- a. If the source is not controlled by a wet scrubber, tray tower or dry sorbent injection system, the Permittee shall operate a CEMS in accordance with the requirements of Condition III.K.1 above. If the Permittee operates HCl CEMS, the Permittee shall demonstrate initial compliance based on the performance test based on the 30 kiln operating days that occur after September 9, 2016 in which the Permittee operates using a HCl CEMS. Hourly HCl concentration data shall be obtained according to Condition III.K.1.a.

[40 CFR 63.1349(b)(6)(ii)]

- b. If the source is equipped with a wet scrubber, tray tower or dry scrubber, and HCl CEMS are not installed, the Permittee shall conduct performance testing by one of the following methods,

[40 CFR 63.1349(b)(6)(i)]

- (1) The Permittee shall conduct performance testing using Method



321 of Appendix A to 40 CFR Part 63.

- (2) For kilns with inline raw mills, testing shall be conducted for the raw mill on and raw mill off conditions.
- (3) The Permittee shall establish site specific parameter limits by using the CPMS required in Condition III.K.1.a.
  - (a) For a wet scrubber or tray tower, the Permittee shall measure and record the pressure drop across the scrubber and/or liquid flow rate and pH in intervals of no more than 15 minutes during the HCl test. The Permittee shall compute and record the 24-hour average pressure drop, pH, and average scrubber water flow rate for each sampling run in which the applicable emissions limit is met.
  - (b) For a dry scrubber, the Permittee shall measure and record the sorbent injection rate in intervals of no more than 15 minutes during the HCl test. The Permittee shall compute and record the 24-hour average sorbent injection rate and average sorbent injection rate for each sampling run in which the applicable emissions limit is met.

- c. If kiln gases are diverted to a coal mill and exhausted through a separate stack, the Permittee shall calculate a kiln-specific HCl limit using the following equation:

[40 CFR § 63.1349(b)(6)(iv)]

$$C_{ks} = \frac{MACTLimit * (Q_{ks} + Q_{cm}) - (Q_{cm} \times C_{cm})}{Q_{ks}}$$

Where:

$C_{ks}$  = Kiln stack concentration (ppmvd)

$Q_{cm}$  = Coal mill flow rate (volume /hr)

$C_{cm}$  = Coal mill concentration (ppmvd)

$Q_{ks}$  = Kiln stack flow rate (volume /hr)

- d. If the Permittee chooses to monitor SO<sub>2</sub> emissions using SO<sub>2</sub> CEMS to demonstrate compliance with the HCl emission limit,

- (1) The Permittee shall establish an SO<sub>2</sub> operating limit equal to the highest 1 hour average recorded during the HCl stack test as per the procedures in 40 CFR 1349(b)(8). This operating limit shall apply only for demonstrating HCl compliance.

[40 CFR 63.1349(b)(6)(iii), 40 CFR 63.1349(b)(8)]

- (2) If the SO<sub>2</sub> level exceeds by 10 percent or more the site-specific

SO<sub>2</sub> emissions limit, the Permittee shall

[40 CFR 63.1349(b)(8)(x)(A) and (B)]

- (a) As soon as possible but no later than 30 days after the exceedance, conduct an inspection and take corrective action to return the SO<sub>2</sub> CEMS measurements to within the established value. And,
- (b) Within 90 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct another performance test to determine compliance with the HCl limit and to verify or re-establish the site-specific SO<sub>2</sub> emissions limit.

e. Performance Test Frequency

Performance tests required under Conditions III.K.2.b and III.K.2.d above shall be repeated every 30 months and must be completed between 29 and 31 calendar months after the previous performance test except when HCl is monitored using CEMS.

[40 CFR 63.1349(c)]

**L. Permit Shield**

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 63.1340, 63.1341, 63.1343, 63.1345, 63.1346, 63.1347, 63.1348, 63.1349, 63.1350, 63.1351, 63.1353, 63.1354 and 63.1355.

[A.A.C. R18-2-325]

**IV. QUARRY AND RAW MATERIAL CRUSHING, SCREENING AND SWEETENING OPERATIONS**

**A.** This Section is applicable to quarry, raw material crushing/screening, sweetening operations prior to feed to raw mill.

**B. Activities not subject to New Source Performance Standards (NSPS) Requirements**

1. Applicability

The conditions of this Part shall apply to the quarry, raw material crushing, screening and sweetening operations constructed before August 31, 1983.

[A.A.C. R18-2-702.A]

2. Particulate Matter

a. Emission Limitations/Standards

- (1) The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any gravel or crushed stone processing plant, in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-722.B]

- (a) For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (b) For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (2) The Permittee shall not cause or allow to be discharged into the atmosphere from the affected quarry operation, any plume or effluent which exhibits an opacity greater than 20%, as determined by Reference Method 9 in 40 CFR Part 60.

[A.A.C. R18-2-702.B]

b. Air Pollution Control Requirements

[A.A.C. R18-2-306.A.2, -331.A.3.d, -331.A.3.e, and -722.D]

- (1) The Permittee shall install, maintain, and operate spray bars, including periods of startup, shutdown, and malfunction, to control visible emissions from crushing, screening, handling, transporting or conveying of materials, or other operations likely to result in significant amounts of airborne dust, or the material shall be adequately wet to minimize visible emissions to the extent practicable.
- (2) Spray bar pollution controls shall be utilized in accordance with “EPA Control of Air Emissions from Process Operations in the Rock Crushing Industry” (EPA 340/1-79-002), “Wet Suppression System” (pages 15-34, amended as of January 1979 (and no future amendments or editions)), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of

spray bars and nozzles as required by the Director to minimize air pollution.

c. Monitoring, Record Keeping, and Reporting Requirements

- (1) The Permittee shall perform a bi-weekly monitoring of visible emissions from the stacks associated with the quarry, raw material crushing/screening and sweetening operations, when in operation, in accordance with the procedure in Condition I.D.2 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- (2) The Permittee shall perform a bi-weekly monitoring of visible emissions for the fugitive emissions associated with the quarry, raw material crushing/screening and sweetening operations, when in operation, in accordance with the procedure in Condition I.D.3 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- (3) The Permittee shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the process weight of gravel or crushed stone produced. The weighing devices shall have an accuracy of  $\pm 5\%$  over their operating range.

[A.A.C. R18-2-722.F and -331.A.3.c]

- (4) The Permittee shall maintain daily records of the crushed material produced in tons.

[A.A.C. R18-2-722.G]

3. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-702.B, A.A.C. R18-2-722.B, A.A.C. R18-2-722.D, A.A.C. R18-2-722.F, and A.A.C. R18-2-722.G.

[A.A.C. R18-2-325]

**C. Activities Subject to New Source Performance Standards (NSPS) Requirements**

1. Applicability

The conditions of this subsection apply to quarry, raw material crushing/screening and sweetening operations constructed/modified after August 31, 1983.

[40 CFR 60.670(a)(1), 60.670(c)(1) and 60.670(e)]

2. Particulate Matter and Opacity

a. Emission Limitations and Standards

- (1) The Permittee shall not allow to be discharged into the atmosphere from any crusher which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, at which a capture system is not used, any fugitive emissions which exhibit visible emissions greater than 15 percent

opacity.

[40 CFR 60.672.b and A.A.C. R18-2-331.A.3.f]

[Material permit conditions are indicated by underline and italics]

- (2) *The Permittee shall not allow to be discharged into the atmosphere from any grinding mill, screening operation, bucket elevator, transfer point on belt conveyors, bagging operation, storage bin, enclosed truck or railcar loading stations or any other affected facility, which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, any fugitive emissions (including emissions escaping capture systems) which exhibit visible emissions greater than 10 percent opacity.*

[40 CFR 60.672.b and A.A.C. R18-2-331.A.3.f]

[Material permit conditions are indicated by underline and italics]

- (3) The Permittee shall not allow to be discharged into the atmosphere from any affected facility which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, stack emissions which contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.022 grains per dry standard cubic foot).

[40 CFR 60.672.a]

- (4) The Permittee shall not allow to be discharged into the atmosphere from any affected facility which commenced construction, modification, or reconstruction on or after April 22, 2008, stack emissions which contain particulate matter in excess of 0.032 grams per dry standard cubic meter (0.014 grains per dry standard cubic foot)

[40 CFR 60.672.a]

- (5) *The Permittee shall not allow to be discharged into the atmosphere from any affected facility which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, dry control device stack emissions which exhibit visible emissions greater than 7 percent opacity.*

[40 CFR 60.672.a and A.A.C. R18-2-331.A.3.f]

[Material permit conditions are indicated by underline and italics]

- (6) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility shall comply with the applicable emission limitations of Conditions VI.C.2.a(1) through (5) above, or the building enclosing the affected facility or facilities shall comply with the following emission limits:

[40 CFR 60.672.e]

- (a) *The Permittee shall not allow to be discharged into the atmosphere from the building openings (except for vents) any fugitive emissions which exhibit visible emissions greater than 7 percent opacity.*

[40 CFR 60.672.e.1 and A.A.C. R18-2-331.A.3.f]

[Material permit conditions are indicated by underline and italics]

- (b) The Permittee shall not allow to be discharged into the atmosphere from any vent of the building any emissions from any affected facility which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, which contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.022 grains per dry standard cubic foot) or exhibit greater than 7 percent opacity.

[40 CFR 60.672.e.2 and A.A.C. R18-2-331.A.3.f]

[Material permit conditions are indicated by underline and italics]

- (c) The Permittee shall not allow to be discharged into the atmosphere from any vent of the building any emissions from any affected facility which commenced construction, modification, or reconstruction on or after April 22, 2008, which contain particulate matter in excess of 0.032 grams per dry standard cubic meter (0.014 grains per dry standard cubic foot).

[40 CFR 60.672.e.2]

b. Air Pollution Control Requirement

The Permittee shall install, maintain, and operate spray bars, including periods of startup, shutdown, and malfunction, to control visible emissions from crushing, screening, handling, transporting or conveying of materials, or other operations likely to result in significant amounts of airborne dust, or the material shall be adequately wet to minimize visible emissions to the extent practicable.

[A.A.C. R18-2-306.A.2, -331.A.3.d, and -331.A.3.e]

[Material permit conditions are indicated by underline and italics]

c. Monitoring, Record Keeping, and Reporting Requirements

- (1) The Permittee shall perform a bi-weekly monitoring of visible emissions from the stacks associated with the quarry, raw material crushing/screening and sweetening operations, when in operation, in accordance with the procedure in Condition I.D.2 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- (2) The Permittee shall perform a bi-weekly monitoring of visible emissions for the fugitive emissions associated with the quarry, raw material crushing/screening and sweetening operations, when in operation, in accordance with the procedure in Condition I.D.3 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- (3) If wet suppression is used to control emissions from any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, the Permittee shall perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The

Permittee shall initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if it is found that water is not flowing properly during an inspection of the water spray nozzles. The Permittee shall record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook.

[40 CFR 60.674.b]

- (a) If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility shall comply with the requirements under 40 CFR 60.674.b.1.
  - (b) If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry shall specify the control mechanism being used instead of the water sprays.
- (4) Except as specified in Condition VI.C.2.c(5) below, the Permittee of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, and which uses a baghouse to control emissions shall conduct quarterly 30-minute visible emissions inspections using EPA Method 22. The Method 22 test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the Permittee shall initiate corrective action within 24 hours to return the baghouse to normal operation. The Permittee shall record each Method 22 test, including the date and any corrective actions taken, in the logbook. The Permittee may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test in accordance with Condition VI.C.2.e(2) simultaneously with a Method 22 test to determine what constitutes normal visible emissions from the baghouse when it is in compliance with the applicable PM limit. The revised visible emissions success level shall be incorporated into the permit.

[40 CFR 60.674.c]

- (5) As an alternative to the periodic Method 22 visible emissions inspections specified in Condition VI.C.2.c(4) above, the Permittee of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, which uses a baghouse to control emissions may use a bag leak detection system. The Permittee shall install, operate, and maintain the bag leak detection system according to 40 CFR 60.674(d)(1) through (3).

[40 CFR 60.674.d and A.A.C. R18-2-331.A.3.c]

[Material permit conditions are indicated by underline and italics]

- (6) The Permittee shall submit to the Director the following information about the existing facility being replaced and the replacement piece of equipment.

[40 CFR 60.676(a)]

- (a) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

- (i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and
- (ii) The rated capacity in tons per hour of the replacement equipment

- (b) For a screening operation:

- (i) The total surface area of the top screen of the existing screening operation being replaced and
- (ii) The total surface area of the top screen of the replacement screening operation

- (c) For a conveyor belt:

- (i) The width of the existing belt being replaced and
- (ii) The width of the replacement conveyor belt

- (d) For a storage bin:

- (i) The rated capacity in megagrams or tons of the existing storage bin being replaced and
- (ii) The rated capacity in megagrams or tons of replacement storage bins

- (7) The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in Condition VI.C.2.a of this Attachment, including reports of opacity observations made using Method 9 to demonstrate compliance with Conditions VI.C.2.a(1), (2) and (6) above.

[40 CFR 60.676(f)]

- (8) The Permittee that operates affected facilities for which construction, modification, or reconstruction commenced on or after April 22, 2008, shall record each periodic inspection required under Conditions VI.C.2.c(3) and (4), including dates and any corrective actions taken, in a logbook (in written or electronic format). The Permittee shall keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Director upon request.

[40 CFR 60.676.b.1]



- (9) For each bag leak detection system installed and operated according to Condition VI.C.2.c(5), the Permittee shall keep the records required under 40 CFR 60.676(b)(2).

[40 CFR 60.676.b.2]

d. Notification Requirements

The Permittee shall furnish to the Director a written notification as follows for any affected facility subject to this Section:

[40 CFR 60.7(a)(4)]

- (1) A notification of any physical or operational change to an affected facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR §60.14(e).
- (2) This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Director may request additional relevant information subsequent to this notice.

e. Performance Test Requirements

(1) Initial Compliance

- (a) Unless the initial test has been conducted previously, the Permittee shall demonstrate initial compliance with the applicable opacity and PM limits for stack emissions contained in Conditions VI.C.2.a(3), (4) and (5) by conducting initial performance tests according to 40 CFR 60.8 and the test methods and procedures of Condition VI.C.2.e(2). Affected facilities controlled by wet scrubbers are exempt from opacity testing.

[Table 2 to 40 CFR 60 Subpart OOO]

- (b) Unless the initial test has been conducted previously, the Permittee shall demonstrate initial compliance with the applicable opacity limits for fugitive emissions contained in Conditions VI.C.2.a(1) and (2) by conducting initial performance tests according to 40 CFR 60.11 and the test methods and procedures of Condition VI.C.2.e(3). Affected facilities that commenced construction, modification, or reconstruction on or after April 22, 2008, and are not controlled by water sprays or water carryover from upstream water sprays shall conduct a repeat performance test within 5 years of the previous test.

[Table 3 to 40 CFR 60 Subpart OOO]

- (2) The Permittee shall determine compliance with the PM standards in Conditions VI.C.2.a(3), (4) and (5) as follows:

[40 CFR 60.675.b]

- (a) Except as specified alternate methods in 40 CFR 60.675(e)(3) and (4), Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
- (b) Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.
- (3) In determining compliance with the particulate matter standards in Conditions VI.C.2.a(1) and (2) or VI.C.2.a(6)(a), the Permittee shall use Method 9 and the procedures in 40 CFR 60.11, with the following additions:

[40 CFR 60.675.c.1]

- (a) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
- (b) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources ( e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A–4 of 40 CFR 60, Section 2.1) must be followed.
- (c) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
- (4) When determining compliance with the fugitive emissions standards for any affected facility under Conditions VI.C.2.a(1) and (2), and VI.C.2.a(6)(a) the duration of the Method 9 observations shall be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits shall be based on the average of the five 6-minute averages.

[40 CFR 60.675.c.3]

- (5) To demonstrate compliance with the fugitive emission limits for buildings specified in Condition VI.C.2.a(6)(a), the Permittee shall complete the testing as specified below. Performance tests shall be conducted while all affected facilities inside the building

are operating.

[40 CFR 60.675.d]

- (a) If the building encloses any affected facility that commences construction, modification, or reconstruction on or after April 22, 2008, the Permittee of the affected facility shall conduct an initial Method 9 performance test according to Condition VI.C.2.e(1) and 40 CFR 60.11.
- (b) If the building encloses only affected facilities that commenced construction, modification, or reconstruction before April 22, 2008, and the Permittee has previously conducted an initial Method 22 performance test showing zero visible emissions, then the Permittee has demonstrated compliance with the opacity limit in Condition VI.C.2.a(6)(a). If the Permittee has not conducted an initial performance test for the building before April 22, 2008, then the Permittee shall conduct an initial Method 9 performance test according to Condition VI.C.2.e(1) and 40 CFR 60.11 to show compliance with the opacity limit.
- (6) The Permittee may use as alternatives methods in 40 CFR 60.675(e) to the reference methods and procedures in this Section.  
[40 CFR 60.675.e]
- (7) For performance tests involving only Method 9 testing, the Permittee may reduce the 30-day advance notification of performance test in 40 CFR 60.7(a.6) and 60.8(d) to a 7-day advance notification.  
[40 CFR 60.675.g]
- (8) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in 40 CFR 60.671) of the affected facility, then with approval from the Director, the Permittee may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.  
[40 CFR 60.675.i]

#### **D. Permit Shield**

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-702.B(1), A.A.C. R18-2-722.B, A.A.C. R18-2-722.D, A.A.C. R18-2-722.F, A.A.C. R18-2-722.G, 40 CFR 60.670(c)(2), 40 CFR 60.670(e), 40 CFR 60.672, 40 CFR 60.675(a), 40 CFR 60.675(b)(2), 40 CFR 60.675(c), 40 CFR 60.675(d), 40 CFR 60.675(e), 40 CFR 60.675(g), 40 CFR 60.675(h), 40 CFR 60.676(a), 40 CFR 60.676(f), and 40 CFR 60.676(g).

[A.A.C. R18-2-325]

### **V. COAL PREPARATION OPERATIONS**

#### **A. Activities not Subject to New Source Performance Standards (NSPS) Standards**

1. Applicability

A non-NSPS affected facility is defined as each coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems which has a capacity of less than 200 tons per day, or a capacity greater than 200 tons per day and constructed prior to October 24, 1974. For each non-NSPS affected facility identified in Attachment "C," refer to the following applicable conditions.

2. Particulate Matter Emission Limitations/Standards

- a. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any coal preparation plant equipment, in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-716.B]

- (1) For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (2) For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- b. For the purposes of Condition VII.A.2 above, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emissions of particulate matter.

[A.A.C. R18-2-716.D]

- c. The Permittee shall not cause or allow to be discharged into the atmosphere from the affected coal preparation operation, any plume or effluent which exhibits an opacity greater than 20%, as determined by Reference Method 9 in 40 CFR Part 60.

[A.A.C. R18-2-702.B]

3. Monitoring, Record Keeping, and Reporting Requirements

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- a. The Permittee shall perform a bi-weekly monitoring of visible emissions from the stacks associated with the coal preparation operations, when in operation in accordance with the procedure in Condition I.D.2 of this Attachment.
- b. The Permittee shall perform a bi-weekly monitoring of visible emissions for the fugitive emissions associated with the coal preparation operations, when in operation in accordance with the procedure in Condition I.D.3 of this Attachment.

4. Permit Shield

Compliance with the terms of this Section shall be deemed compliance with A.A.C. R18-2-716.B, 716.D and 702.B.

[A.A.C. R18-2-325]

**B. Activities Subject to New Source Performance Standards (NSPS) Standards**

1. Applicability

This Section is applicable to each coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems which has a capacity of more than 200 tons per day, and which commenced construction or modification after October 24, 1974 and before April 28, 2008. The affected facilities are identified in the equipment list in Attachment "C".

[40 CFR 60.250(a) and (b)]

2. Emission Limitations and Standards

The Permittee shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal gases which exhibit 20 percent opacity or greater.

[40 CFR 60.254(a)]

3. Monitoring, Record Keeping, and Reporting Requirements

- a. The Permittee shall perform a bi-weekly monitoring of baseline visible emissions from the other stacks associated with coal preparation plant except the coal mill stack S-453, when they are in operation, in accordance with the procedure in Condition I.D.2 of this Attachment.
- b. The Permittee shall perform a bi-weekly monitoring of visible emissions for the fugitive emissions coal preparation plant, when they are in operation, in accordance with the procedure in Condition I.D.3 of this Attachment.
- c. For the purpose of reports required under 40 CFR 60.7(c), the Permittee shall report semiannually periods of excess emissions all 6-minute average

[A.A.C. R18-2-306.A.3.c and -306.A.5]

[A.A.C. R18-2-306.A.3.c and -306.A.5]

opacities that exceed the applicable standard.

[40 CFR 60.258(b)(3)]

- d. Within 60 days after the date of completing each performance evaluation conducted to demonstrate compliance, the Permittee shall submit the opacity performance tests data to United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; mail code: D243-01; RTP, NC 27711.

[40 CFR 60.258(d)]

4. Performance Testing Requirements

- a. The Permittee shall determine compliance with the applicable opacity standards as by conducting performance test as specified below:

- (1) Method 9 of Appendix A-4 of 40 CFR 60 and the procedures in 40 CFR 60.11 shall be used to determine opacity, with the following exceptions:

[40 CFR 60.257(a)(1)]

- (a) The duration of the Method 9 performance test shall be one hour (ten 6-minute averages).

- (b) If, during the initial 30 minutes of the observation of a Method 9, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes.

- (2) For each affected facility subject to an opacity standard, an initial performance test must be performed. Thereafter, a new performance test must be conducted according to the following requirements.

[40 CFR 60.255(a)(2)]

- (a) If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed.

- (b) If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed.

- b. To determine opacity for fugitive coal dust emissions sources, the following additional requirements shall be used.

[40 CFR 60.257(a)(2)]

- (1) The minimum distance between the observer and the emission source shall be 5.0 meters (16 feet), and the sun shall be oriented in the 140-degree sector of the back.

- (2) The observer shall select a position that minimizes interference from other fugitive coal dust emissions sources and make observations such that the line of vision is approximately perpendicular to the plume and wind direction.
  - (3) The observer shall make opacity observations at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Water vapor is not considered a visible emission.
- c. A visible emissions observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met.
- [40 CFR 60.257(a)(3)]
- (1) No more than three emissions points may be read concurrently.
  - (2) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.
  - (3) If an opacity reading for any one of the three emissions points is within 5 percent opacity from the applicable standard (excluding readings of zero opacity), then the observer must stop taking readings for the other two points and continue reading just that single point.

5. Permit Shield

Compliance with the terms of this Section shall be deemed compliance with 40 CFR 60.250(a) and (b), 60.254(a), 60.255(a)(2), 60.257(a)(1), 60.257(a)(2), 60.257(a)(3) 60.258(b)(3)..

[A.A.C. R18-2-325]

## VI. EMERGENCY GENERATOR

### A. Applicability

This Section applies to the 589-HP emergency generator identified in the equipment list in Attachment "C".

### B. Fuel Limitations

The Permittee shall only fire diesel in the internal combustion engines.

[A.A.C. R18-2-306.A.2]

### C. Particulate Matter and Opacity

#### 1. Emissions Limitations and Standards

- a. The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from any stationary rotating machinery into the atmosphere in excess of the amounts calculated by the

following equation:

[A.A.C. R18-2-719.C.1]

$$E = 1.02 Q^{0.769}$$

Where

E = the maximum allowable particulate emission rate in pounds-mass per hour

Q = the heat input in million Btu per hour

- b. The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any stationary rotating machinery, smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

[A.A.C. R18-2-719.E]

## 2. Monitoring, Recordkeeping, and Reporting Requirements

- a. The Permittee shall perform monthly monitoring of visible emissions emanating from the stack of diesel engine, when in operation, in accordance with the procedure in Condition I.D.3 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

- b. The Permittee shall keep records of fuel supplier certifications. The certification shall contain information regarding the name of fuel supplier and lower heating value of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c, A.A.C. R18-2-719.I]

## 3. Permit Shield

Compliance with this Part shall be deemed compliance with A.A.C. R18-2-719.B, A.A.C. R18-2-719.C.1, A.A.C. R18-2-719.I and A.A.C. R18-2-719.E.

[A.A.C. R18-2-325]

## D. Sulfur Dioxide

### 1. Emission Limitations and Standards

- a. The Permittee shall not emit or cause to emit more than 1.0 pound of sulfur dioxide per million Btu heat input.

[A.A.C. R18-2-719.F]

- b. The Permittee shall not burn high sulfur diesel fuel (sulfur content greater than 0.9 % by weight) in the generator.

[A.A.C. R18-2-719.H]

### 2. Monitoring, Recordkeeping, and Reporting Requirements

- a. The Permittee shall keep records of fuel supplier certifications documenting the sulfur content of the fuel. These records shall be made



available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c and -719.I]

- b. The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in either internal combustion engine exceeds 0.8%.

[A.A.C. R18-2-719.J]

3. Permit Shield

Compliance with this Part shall be deemed compliance with A.A.C. R18-2-719.F, A.A.C. R18-2-719.H, A.A.C. R18-2-719.I, and A.A.C. R18-2-719.J.

[A.A.C. R18-2-325]

## VII. COOLING TOWERS

### A. Applicability

This Section is applicable to Cooling Towers 1, 2 and 3.

### B. Particulate Matter

1. Emission Limitations/Standards

- a. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from Cooling Towers in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-730.A]

- (1) For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (2) For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- b. For the purposes of Condition IX.B.1 above, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.  
[A.A.C. R18-2-730.B]
- c. The Permittee shall not emit gaseous or odorous materials in such quantities or concentrations as to cause air pollution.  
[A.A.C. R18-2-730.D]
- d. The Permittee shall not cause or allow to be discharged into the atmosphere from the cooling towers any plume or effluent which exhibits an opacity greater than 20%, as determined by Reference Method 9 in 40 CFR Part 60.  
[A.A.C. R18-2-702.B.2 and 3]

2. Monitoring, Recordkeeping and Reporting Requirements  
[A.A.C. R18-2-306.A.3.a and -306.A.4]

The Permittee shall perform a monthly monitoring of visible emissions from the cooling towers, when in operation in accordance with the procedure in Condition I.D.2 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

3. Permit Shield

Compliance with the terms of this Part shall be deemed compliance with A.A.C. R18-2-702.B(1), A.A.C. R18-2-730.A, A.A.C. R18-2-730.B, and A.A.C. R18-2-730.D.

[A.A.C. R18-2-325]

## VIII. FUGITIVE DUST REQUIREMENTS

### A. Applicability

This Section applies to any non-point source of fugitive dust in the facility.

### B. Particulate Matter and Opacity

Open Areas, Roadways & Streets, Storage Piles, and Material Handling

#### 1. Emission Limitations/Standards

- a. Opacity of emissions from any fugitive dust non-point source shall not be greater than 40%.  
[A.A.C. R18-2-614]
- a. The Permittee shall not cause, allow or permit visible emissions from any fugitive dust point source, in excess of 20 percent opacity.  
[A.A.C. R18-2-702.B]
- b. The Permittee shall operate the facility in accordance with Dust Control Plan, Attachment “D” of this Permit.

[A.A.C. R18-2-306.01.A]

c. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

- (1) Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;

[A.A.C. R18-2-604.A]

- (2) Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;

[A.A.C. R18-2-604.B]

- (3) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed;

[A.A.C. R18-2-605.A]

- (4) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust;

[A.A.C. R18-2-605.B]

- (5) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when crushing, handling, or conveying material likely to give rise to airborne dust;

[A.A.C. R18-2-606]

- (6) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored;

[A.A.C. R18-2-607.A]

- (7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents;

[A.A.C. R18-2-607.B]

- (8) Any other method as proposed by the Permittee and approved by the Director.

[A.A.C. R18-2-306.A.3.c]

## 2. Air Pollution Control Requirements

Haul Roads and Storage Piles

*Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles.*

[A.A.C. R18-2-306.A.2 and -331.A.3.d]

[Material Permit Condition is indicated by underline and italics]

3. Monitoring and Recordkeeping Requirements

- a. The Permittee shall maintain records of the dates on which any of the activities listed in Conditions VIII.B.1.c above were performed and the control measures that were adopted.

[A.A.C. R18-2-306.A.3.c]

a. Opacity Monitoring Requirements

The Permittee shall perform a bi-weekly monitoring of visible emissions for the fugitive emissions sources in accordance with the dust control plan and the procedure in Condition I.D.3 of this Attachment.

[A.A.C. R18-2-306.A.3.c and -306.A.5]

4. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with A.A.C. R18-2-604, -605, -606, 607, and -612.

**IX. MOBILE SOURCE REQUIREMENTS**

**A. Applicability**

The requirements of this Section are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.109.

[A.A.C. R18-2-801.A]

**B. Particulate Matter and Opacity**

1. Emission Limitations/Standards

a. Off-Road Machinery

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. Off-road machinery shall include trucks, graders, scrapers, rollers, and other construction and mining machinery not normally driven on a completed public roadway.

[A.A.C. R18-2-802.A and -802.B]

b. Roadway and Site Cleaning Machinery

- (1) The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C. R18-2-804.A]

- (2) The Permittee shall take reasonable precautions, such as the use of dust suppressants, before the cleaning of a site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

[A.A.C. R18-2-804.B]

- c. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

[A.A.C. R18-2-801.B]

## 2. Recordkeeping Requirement

The Permittee shall keep a record of all emissions related maintenance activities performed on the Permittee's mobile sources stationed at the facility as per manufacturer's specifications.

[A.A.C. R18-2-306.A.5.a]

## 3. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-801, -802, and -804.

[A.A.C. R18-2-325]

# **X. OTHER PERIODIC ACTIVITIES**

## **A. Abrasive Blasting**

### 1. Particulate Matter and Opacity

#### a. Emission Limitations/Standards

The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include:

- (1) Wet blasting;
- (2) Effective enclosures with necessary dust collecting equipment; or
- (3) Any other method approved by the Director.

[A.A.C. R18-2-726]

#### b. Opacity

The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

2. Monitoring and Recordkeeping Requirement

Each time an abrasive blasting project is conducted, the Permittee shall make a record of the following:

- a. The date the project was conducted;
- b. The duration of the project; and
- c. Type of control measures employed.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-702.B.3 and -726.

[A.A.C.R18-2-325]

**B.** Use of Paints

1. Volatile Organic Compounds

a. Emission Limitations/Standards

While performing spray painting operations, the Permittee shall comply with the following requirements:

- (1) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.

[A.A.C.R18-2-727.A]

- (2) The Permittee or their designated contractor shall not either:

- (a) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or
- (b) Thin or dilute any architectural coating with a photochemically reactive solvent.

[A.A.C.R18-2-727.B]

- (3) For the purposes of Condition X.B.1.a(2), a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Conditions X.B.1.a(3), or which exceeds any of the following percentage composition limitations, referred

to the total volume of solvent:

- (a) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.
- (b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.
- (c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

[A.A.C.R18-2-727.C]

- (4) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Conditions X.B.1.a(3), it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents.

[A.A.C.R18-2-727.D]

b. Monitoring and Recordkeeping Requirements

- (1) Each time a spray painting project is conducted, the Permittee shall make a record of the following:
  - (a) The date the project was conducted;
  - (b) The duration of the project;
  - (c) Type of control measures employed;
  - (d) Safety Data Sheets (SDS) for all paints and solvents used in the project; and
  - (e) The amount of paint consumed during the project.
- (2) Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of Condition X.B.1.b(1).

[A.A.C. R18-2-306.A.3.c]

c. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C.R18-2-727.

[A.A.C.R18-2-325]

2. Opacity

a. Emission Limitation/Standard

The Permittee shall not cause, allow or permit visible emissions from painting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

b. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with A.A.C.R18-2-702.B.3.

[A.A.C. R18-2-325]

**C. Surface Coating Operations**

1. Emission Limitations and Standards

a. The Permittee shall not operate any surface coating application systems that emits volatile organic compounds in excess of the following:

[A.A.C R18-2-730.L]

(1) 4.3 pounds per gallon (0.5 kilograms per liter) of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(2) 3.5 pounds per gallon (0.42 kilograms per liter) of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to 194 °F (90 °C).

(3) 3.5 pounds per gallon (0.42 kilograms per liter) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings.

(4) 3.0 pounds per gallon (0.36 kilograms per liter) of coating, excluding water, delivered to a coating applicator for all other coatings and application systems.

b. If more than one emission limitation in Condition X.C.1.a above applies to a specific coating, then the least stringent emissions limitation shall be applied.

[A.A.C R18-2-730.M]

c. All VOC emissions from solvent washings shall be considered in the emissions limitations listed in Condition X.C.1.a above, unless the solvent is directed to containers that prevent evaporation to the atmosphere.

[A.A.C R18-2-730.N]

2. Monitoring and Recordkeeping Requirements

[A.A.C. R18-2-306.A.3.c]

a. The Permittee shall log in ink or keep in an electronic format records of the following:

(1) The date the project was conducted;

(2) The duration of the project;



- (3) Type of control measures employed
- (4) Amount of surface coating used for the project
- (5) Copies of the material safety and data sheets (MSDS) for each surface coating applied.

b. The Permittee shall use vendor provided information to ensure that the surface coating materials being used satisfy the standards in Condition X.C.1.a above. In the absence of vendor provided information, the Permittee shall perform engineering calculations using the density and VOC content of the surface coating in order to compare against the standards set forth in Condition X.C.1.a above.

**D. Demolition/Renovation - Hazardous Air Pollutants**

**1. Emission Limitation/Standard**

The Permittee shall comply with all of the requirements of 40 CFR 61 Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos).  
[A.A.C. R18-2-1101.A.12]

**2. Monitoring and Recordkeeping Requirement**

The Permittee shall keep all required records in a file. The required records shall include the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.  
[A.A.C. R18-2-306.A.3.c]

**3. Permit Shield**

Compliance with the conditions of this Section shall be deemed compliance with A.A.C. R18-2-1101.A.12.  
[A.A.C. R18-2-325]

**E. Vapor Extractors**

Materials including solvents or other volatile compounds shall be processed, stored, used and transported in such a manner and by such means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.  
[A.A.C. R18-2-730.F]

**XI. GASOLINE STORAGE TANK**

**A. Applicability**

This Section applies to the gasoline storage tank listed in Section XXV of Equipment List in Attachment “D” of this permit.

**B. Operating Limitations**

1. Gasoline storage tank shall be equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions.  
[A.A.C. R18-2-710.B]
2. All pumps and compressors that handle gasoline shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere.  
[A.A.C. R18-2-710.D]

**C. Monitoring and Recordkeeping Requirements**

1. The Permittee shall, for the gasoline storage tank, maintain a file, of the typical Reid vapor pressure of gasoline stored and of dates of storage. Records of the dates on which the storage vessel is empty shall be maintained.  
[A.A.C. R18-2-710.E.1]
2. The Permittee shall determine and record the average monthly storage temperature and true vapor pressure of gasoline has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.  
[A.A.C. R18-2-710.E.2]
3. The average monthly storage temperature shall be an arithmetic average calculated for each calendar month, or portion thereof, if storage is for less than a month, from bulk liquid storage temperatures determined at least once every seven days.  
[A.A.C. R18-2-710.E..3]
4. The true vapor pressure shall be determined by the procedures in American Petroleum Institute Bulletin 2517, amended as of February 1980 (and no future editions). This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Director requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available upon request to the Director when typical Reid vapor pressure is used.  
[A.A.C. R18-2-710.E.4]
5. In lieu of the requirements in Conditions XIV.C.2 and 3 above, the Permittee may utilize true vapor pressure data provided by the fuel vendor.  
[A.A.C. R18-2-306.A.2]

**D. Permit Shield**

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-724.B, A.A.C R18-2-710.B, A.A.C R18-2-710.D and A.A.C R18-2-710.E.1.  
[A.A.C. R18-2-325]

**XII. DIESEL STORAGE TANKS**

**A. Applicability**

The Section is applicable to diesel storage tank listed in the Equipment List in Attachment “D” of this permit.

**B. Volatile Organic Compounds (VOCs)**

1. The storage tank shall be equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions.  
[A.A.C. R18-2-306.A.2]
2. All pumps and compressors that handle volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere.  
[A.A.C. R18-2-306.A.2]
3. Materials including solvents or other volatile compounds, and other chemicals utilized in the processes under this Section shall be processed, stored, used, and transported in such a manner and by means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.  
[A.A.C. R18-2-730.F]
4. Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.  
[A.A.C. R18-2-730.G]

**C. Permit Shield**

Compliance with the Section shall be deemed compliance with A.A.C. R18-2-730.F and G.  
[A.A.C. R18-2-325]

**XIII. REGIONAL HAZE REQUIREMENTS**

**A. Applicability**

This section applies to Kiln 4 for reduction of NO<sub>x</sub> emissions as required per the Regional Haze Rule.  
[40 CFR §52.145(K)(1)]

**B. Emissions limitations and Standards**

**1. Emission Limitations**

The Permittee shall not emit or cause to be emitted from Kiln 4 NO<sub>x</sub> in excess of 2.12 pounds of NO<sub>x</sub> per ton of clinker produced, based on a rolling 30-kiln operating day basis.

[40 CFR §52.145(K)(3)(i)]

2. Alternate Emission Limitations

Alternatively, following notification as required by Condition XIII.G of this attachment, the Permittee shall not emit or cause to be emitted from Kiln 4 NO<sub>x</sub> in excess of 810 tons per year, based on a rolling 12-month basis.

[40 CFR §52.145(K)(4)]

**C.** Compliance Date

The Permittee shall comply with the requirements of Condition XIII of this attachment no later than December 31, 2018.

[40 CFR §52.145(K)(5)(i)]

**D.** Compliance Determinations

1. Primary Compliance Determination

a. Continuous emission monitoring system

[40 CFR §52.145(K)(7)(i)(A)]

- (1) The Permittee shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of NO<sub>x</sub>, diluent, and stack gas volumetric flow rate from the in-line/raw mill stack, as well as the stack gas volumetric flow rate from the coal mill stack.
- (2) The Permittee shall use CEMS to determine compliance with the emission limitation in Condition XIII.B.1 of this attachment, in combination with data on actual clinker production.
- (3) The Permittee must operate the monitoring system and collect data at all required intervals at all times Kiln 4 is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

b. Methods

[40 CFR §52.145(K)(7)(ii)]

- (1) The Permittee shall record the daily clinker production rates.
- (2) Compliance calculations
  - (a) The Permittee shall calculate and record the 30-kiln operating day average emission rate of NO<sub>x</sub>, in pounds per ton (lb/ton) of clinker produced, as the total of all hourly emissions data for the cement kiln in the preceding 30-kiln operating days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period, using the following equation:

$$E_D = k \left( \frac{1}{n} \right) \frac{\sum_{i=1}^n C_i Q_i}{\sum_{i=1}^n P_i}$$

Where:

$E_D$  = 30 kiln operating day average emission rate of  $\text{NO}_x$ , lb/ton of clinker;

$C_i$  = Concentration of  $\text{NO}_x$  for hour  $i$  as recorded by the CEMS required by Condition XVI.D.1.a of this attachment, ppm;

$Q_i$  = volumetric flow rate of effluent gas for hour  $i$  as recorded by the CEMS required by Condition XVI.D.1.a of this attachment, where  $C_i$  and  $Q_i$  are on the same basis (either wet or dry), scf/hr;

$P_i$  = total kiln clinker produced during production hour  $i$ , ton/hr;

$k$  = conversion factor,  $1.194 \times 10^{-7}$  for  $\text{NO}_x$ ; and

$n$  = number of kiln operating hours over 30 kiln operating days,  $n = 1$  up to 720.

- (b) For each kiln operating hour for which the Permittee does not have at least one valid 15-minute CEMS data value, the Permittee must use the average emissions rate in pounds per ton (lb/hr) from the most recent previous hour for which valid data are available. Hourly clinker production shall be determined by the Permittee in accordance with the requirements found at 40 CFR 60.63(b).
  - (3) At the end of each kiln operating day, the Permittee shall calculate and record a new 30-day rolling average emission rate in lb/ton clinker from the arithmetic average of all valid hourly emission rates for the current kiln operating day and the previous 29 successive kiln operating days.
  - (4) Upon and after the completion of installation of ammonia injection on a unit, the Permittee shall install, and thereafter maintain and operate, instrumentation to continuously monitor and record levels of ammonia injection for that unit.
2. Alternate Compliance Determination

[40 CFR §52.145(K)(8)]

If the Permittee chooses to comply with the emission limits of Condition XIII.B.2 of this attachment, the following requirements may be used in lieu of Condition XVI.D.1 of this attachment to demonstrate compliance with the emission limits in Condition XVI.B.2 of this attachment.

- a. Continuous emission monitoring system

[40 CFR §52.145(K)(8)(i)]

- (1) At all times after the compliance date specified in Condition XIII.C of this attachment, the Permittee shall maintain, calibrate,

and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of NO<sub>x</sub>, diluent, and stack gas volumetric flow rate from the in-line/raw mill stack, as well as the stack gas volumetric flow rate from the coal mill stack.

- (2) The Permittee shall use CEMS to determine compliance with the emission limitation in Condition XIII.B.2 of this attachment.
- (3) The Permittee must operate the monitoring system and collect data at all required intervals at all times Kiln 4 is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

b. Methods

[40 CFR §52.145(K)(8)(ii)]

- (1) Compliance with the ton per year NO<sub>x</sub> emission limit described in Condition XIII.B.2 of this attachment shall be determined based on a rolling 12-month basis.
- (2) The rolling 12-month NO<sub>x</sub> emission rate for the kiln shall be calculated within 30 days following the end of each calendar month in accordance with the following procedure:
  - (a) Sum the hourly pounds of NO<sub>x</sub> emitted for the month just completed and the eleven (11) months preceding the month just completed, to calculate the total pounds of NO<sub>x</sub> emitted over the most recent twelve (12) month period for that kiln.
  - (b) Divide the total pounds of NO<sub>x</sub> calculated from Step one by two thousand (2,000) to calculate the total tons of NO<sub>x</sub>.
  - (c) Each rolling 12-month NO<sub>x</sub> emission rate shall include all emissions that occur during all periods within the 12-month period, including emissions from startup, shutdown and malfunction.

- c. Upon and after the completion of installation of ammonia injection on the unit, the Permittee shall install, and thereafter maintain and operate, instrumentation to continuously monitor and record levels of ammonia injection for that unit.

[40 CFR §52.145(K)(8)(iii)]

**E. Recordkeeping Requirements**

1. Recordkeeping

[40 CFR §52.145(K)(9)]

The Permittee shall maintain the following records for at least five years:

- a. All CEMS data, including the date, place, and time of sampling or measurement; emissions and parameters sampled or measured; and results.
- b. All records of clinker production.
- c. Daily 30-day rolling emission rates of NO<sub>x</sub>, calculated in accordance with Condition XIII.D.1.b of this attachment.
- d. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records specified by 40 CFR part 60, Appendix F, Procedure 1.
- e. Records of ammonia injection, as recorded by the instrumentation required in Condition XIII.D.1.b(4) of this attachment.
- f. Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices.
- g. Any other records specified by 40 CFR part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

2. Alternate Recordkeeping Requirements

[40 CFR §52.145(K)(10)]

If the Permittee chooses to comply with the emission limits of Condition XVI.B.2 of this attachment, the Permittee shall maintain the records listed as follows in lieu of the records contained in Condition XIII.E.1 of this attachment. The Permittee shall maintain the following records for at least five years:

- a. All CEMS data, including the date, place, and time of sampling or measurement; emissions and parameters sampled or measured; and results.
- b. Monthly rolling 12-month emission rates of NO<sub>x</sub>, calculated in accordance with Condition XIII.D.2.b of this attachment.
- c. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records specified by 40 CFR part 60, Appendix F, Procedure 1.
- d. Records of ammonia injection, as recorded by the instrumentation required in Condition XIII.D.2.c of this attachment.
- e. Records of all major maintenance activities conducted on emission units, air pollution control equipment, and CEMS measurement devices.
- f. Any other records specified by 40 CFR part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

**F. Reporting Requirements**

[40 CFR §52.145(K)(11)]

1. All reports and notifications required under Condition XIII of this attachment shall be submitted by the Permittee to U.S. Environmental Protection Agency, Region 9, and Enforcement Division via electronic mail to [aeo\\_r9@epa.gov](mailto:aeo_r9@epa.gov) and to Air Division via electronic mail to [R9AirPermits@epa.gov](mailto:R9AirPermits@epa.gov). Reports required under Condition XIII.F.1.c through Condition XIII.F.1.g of this attachment shall be submitted within 30 days after the applicable compliance date in Condition XIII.C and at least semiannually thereafter, within 30 days after the end of a semiannual period. The Permittee may submit reports more frequently than semiannually for the purposes of synchronizing reports required under this section with other reporting requirements, such as the Title V monitoring report required by 40 CFR 70.6(a)(3)(iii)(A), but at no point shall the duration of a semiannual period exceed six months.
  - a. Prior to commencing construction of the ammonia injection system, the Permittee shall submit to the EPA a report describing the design of the SNCR system. This report shall include:
    - (1) reagent type,
    - (2) description of the locations selected for reagent injection,
    - (3) reagent injection rate (expressed as a molar ratio of reagent to exhaust gas),
    - (4) equipment list,
    - (5) equipment arrangement, and
    - (6) a summary of kiln characteristics that were relied upon as the design basis for the SNCR system.
  - b. Within 30 days following the NO<sub>x</sub> compliance date in Condition XIII.C, the Permittee shall submit to the EPA a report of any process improvement or debugging activities that were performed on the SNCR system. This report shall include:
    - (1) a description of each process adjustment performed on the SNCR system or the kiln,
    - (2) a discussion of whether the adjustment affected NO<sub>x</sub> emission rates,
    - (3) a description of the range (if applicable) over which the adjustment was examined, and
    - (4) a discussion of how the adjustment will be reflected or accounted for in kiln operating practices.
    - (5) If CEMS data or kiln operating data were recorded during process improvement or debugging activities, the Permittee shall submit the recorded CEMS and kiln operating data with the report.
    - (6) The data shall be submitted in an electronic format consistent with



and able to be manipulated by a spreadsheet program such as Microsoft Excel.

- c. The Permittee shall submit a report that lists the daily 30-day rolling emission rates for NO<sub>x</sub>.
- d. The Permittee shall submit excess emissions reports for NO<sub>x</sub> limits. Excess emissions means emissions that exceed the emissions limits specified in Condition XIII.B.1 of this attachment. The reports shall include the following:
  - (1) the magnitude,
  - (2) date(s), and
  - (3) duration of each period of excess emissions,
  - (4) specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit,
  - (5) the nature and cause of any malfunction (if known), and
  - (6) the corrective action taken or preventative measures adopted.
- e. The Permittee shall submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments.
- f. The Permittee shall also submit results of any CEMS performance tests specified by 40 CFR part 60, Appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).
- g. When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, the Permittee shall state such information in the reports required by Condition XVI.E.1.b of this attachment.

2. Alternate Reporting Requirements

[40 CFR §52.145(K)(12)]

If the Permittee chooses to comply with the emission limits of Condition XIII.B.2 of this attachment, the Permittee shall submit the reports listed in this paragraph in lieu of the reports contained in Condition XIII.F.1 of this attachment. All reports required under this paragraph shall be submitted within 30 days after the applicable compliance date in Condition XIII.C of this attachment and at least semiannually thereafter, within 30 days after the end of a semiannual period. The Permittee may submit reports more frequently than semiannually for the purposes of synchronizing reports required under this section with other reporting requirements, such as the Title V monitoring report required by 40 CFR 70.6(a)(3)(iii)(A), but at no point shall the duration of a semiannual period exceed six months.

- a. The Permittee shall submit a report that lists the monthly rolling 12-month emission rates for NO<sub>x</sub>.
- b. The Permittee shall submit excess emissions reports for NO<sub>x</sub> limits. Excess emissions means emissions that exceed the emissions limits specified in Condition XIII.B.1 of this attachment. The reports shall include
  - (1) the magnitude,
  - (2) date(s), and
  - (3) duration of each period of excess emissions,
  - (4) specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit,
  - (5) the nature and cause of any malfunction (if known), and
  - (6) the corrective action taken or preventative measures adopted.
- c. The Permittee shall submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments.
- d. The Permittee shall also submit results of any CEMS performance tests specified by 40 CFR part 60, Appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).
- e. When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, the owner/operator shall state such information in the reports required by Condition XIII.E.1.b of this attachment.

**G. Notification Requirements**

[40 CFR §52.145(K)(13)]

- 1. The Permittee shall submit notification of commencement of construction of any equipment which is being constructed to comply with the NO<sub>x</sub> emission limits in Condition XIII.B.1 of this attachment.
- 2. The Permittee shall submit semiannual progress reports on construction of any such equipment.
- 3. The Permittee shall submit notification of initial startup of any such equipment.
- 4. By June 30, 2018, the Permittee shall notify EPA Region 9 by letter whether it will comply with the emission limits in Condition XIII.B.1 or whether it will comply with the emission limits in Condition XIII.B.2 of this attachment. In the event that the Permittee does not submit timely and proper notification by June 30, 2018, the Permittee may not choose to comply with the alternative emission limits in Condition XVI.B.2 of this attachment and shall comply with the emission limits in

Condition XVI.B.1 of this attachment.

**H. Equipment Operation**

[40 CFR §52.145(K)(14)]

1. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the unit including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. Pollution control equipment shall be designed and capable of operating properly to minimize emissions during all expected operating conditions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the unit.
2. After completion of installation of ammonia injection on a unit, the Permittee shall inject sufficient ammonia to achieve compliance with NO<sub>x</sub> emission limits set forth in Condition XIII.B.1 of this attachment while preventing excessive ammonia emissions.

**I. Enforcement**

[40 CFR §52.145(K)(15)]

Notwithstanding any other provision in Condition XIII of this attachment, any credible evidence or information relevant as to whether the unit would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed, can be used to establish whether or not the Permittee has violated or is in violation of any standard or applicable emission limit in Condition XIII of this attachment.

ATTACHMENT “C”: EQUIPMENT LIST

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
<b>Raw Material Storage &amp; Handling</b>								
Apron Feeder	AF-101	500 tph	Nico	FD-4255	906	1988		Section VI.B
Apron Feeder	AF-102	100 tph	Nico	FD-4255	905	1988		Section VI.B
Apron Feeder	AF-103	700 tph	Metso	AF5-30FS-10.25-15HP	NA	2004		Section VI.B
Surge Bin	B-101	97 tons	NA	NA	NA	1959		Section VI.A
Belt Conveyor	BC-101	950 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Belt Conveyor	BC-101A	950 tph	Hewitt Robins	NA	NA	1988		Section VI.B
Belt Conveyor	BC-101B	950 tph	Hewitt Robins	NA	NA	1963		Section VI.A
Belt Conveyor	BC-101C	1,000 tph	S&W Steel	NA	NA	1988		Section VI.B
Belt Conveyor	BC-101D	1,000 tph	S&W Steel	NA	NA	1988		Section VI.B
Belt Conveyor	BC-102	670 tph	Hewitt Robins	NA (CAM-ok)	NA	1959	DC-101	Section VI.A
Belt Conveyor	BC-102A	670 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Belt Conveyor	BC-102B	550 tph	S&W Steel	NA	NA	1988		Section VI.B
Belt Conveyor	BC-103A	1200 tph	Hewitt Robins	NA (CAM-ok)	NA	1959	DC-103	Section VI.A
Belt Conveyor	BC-103B	1200 tph	Hewitt Robins	NA (CAM-ok)	NA	1959	DC-103	Section VI.A
Belt Conveyor	BC-103C	500 tph	S&W Steel	NA	NA	1988	DC-102	Section VI.B
Belt Conveyor	BC-103D	300 tph	S&W Steel	NA	NA	1988		Section VI.B
Belt Conveyor	BC-103E	10 tph	NA	NA	NA	2002		Section VI.B
Belt Conveyor	BC-103F	10 tph	NA	NA	NA	2002	DC-102	Section VI.B
Mill Scale Hopper	MSH-001	100 tons	AEF	NA	NA	2005		Section VI.B
Apron Feeder	AF-104	10 tph	Metso	AF4-24FS-20.83-7.5 hp	NA	2004		Section VI.B
Apron Feeder	AF-105	NA.	NA	NA.	NA	2004		Section VI.B
Scavenger Screw	SCV-104	NA	Metso	NA	NA	2004		Section VI.B

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Belt Conveyor	BC-104	667 tph	Hewitt Robins	NA(CAM-ok)	NA	1959	DC-101	Section VI.A
Belt Conveyor	BC-104A	1000 tph	NA	NA	NA	2004	DC-201A	Section VI.B
Belt Conveyor	BC-104B	700 tph	NA	NA	NA	2004		Section VI.B
Belt Conveyor	BC-214	667 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Primary Crusher	CR-101	900 tph	Allis Chalmers	60x48 A-1	3808	1958		Section VI.A
Secondary Crusher	CR-102	700 tph	Williams	580	NA	1958	DC-102	Section VI.A
Sample Crusher	CR-103	NA	Atlantic Coast Crushers	FSM-1212-BB	NA	2003		Section VI.B
Wobler Feeder	F-101	NA	Universal	NA	424X92	1958		Section VI.A
Vibrating Screen	VS-101	NA	Hewitt Robins	72X144(CAM-ok)	VD-6563	1958	DC-101	Section VI.A
Vibrating Screen	VS-102	NA	Hewitt Robins	72X92(CAM-ok)	VD-8182	1958	DC-101	Section VI.A
Vibrating Screen	VS-103	NA	Hewitt Robins	72X92	VD-8183	1958	DC-102	Section VI.A
Rotary Feeder	RF-201	NA	Smoot	FT-12	NA	1986	DC-100	Section VI.B
Dryer	FR-201	0.55 MMBtu/hr	NA	NA	NA	1966		Section VI.A
Sample Mill	RM-201	NA	C.E. Raymond	3036 H.S.	58105	1959	DC-202	Section VI.A
Weigh Feeder	W-101	50 tph	Jeffery	5100	29129	1959		Section VI.A
Screw Conveyor	SC-101	NA	RJ Ruff	NA	NA	1986		Section VI.B
Fly Ash Bin	B-201	187 tons	NA	NA	NA	1986		Section VI.B
Belt Conveyor	BC-201	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Belt Conveyor	BC-202	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Belt Conveyor	BC-203	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Belt Conveyor	BC-205	350 tph	Hewitt Robins	NA	NA	2008	DC-211	Section VI.B
Belt Conveyor	BC-210	700 tph	Hewitt Robins	NA	NA	2005		Section VI.B
Belt Conveyor	BC-212	290 tph	Hewitt Robins	NA	NA	2010		Section VI.B
Belt Conveyor	BC-213A	280 tph	Norfab	NA	NA	1996		Section VI.B

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Belt Conveyor	BC-301	350 tph	Hewitt Robins	NA	NA	1958		Sections III & V
Belt Conveyor	BC-206	350 tph	Hewitt Robins	NA	NA	1959	DC-305	Sections III & V
Belt Conveyor	BC-213	290 tph	Hewitt Robins	NA	NA	1959	DC-305	Sections III & V
Additive Hopper	HP-ADD	NA	Norfab	NA	NA	1996		Section VI.B
Reclaimer	R-201	500 tph	R.E.	NA	NA	1983		Section VI.A
Reclaimer	R-202	500 tph	R.E.	NA	NA	1983		Section VI.A
Stacker	ST-201	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Stacker	ST-202	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Detachable Trailer	TT-201	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Detachable Trailer	TT-202	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
Detachable Trailer	TT-203	500 tph	Hewitt Robins	NA	NA	1959		Section VI.A
<b>Raw Grinding System No. 1</b>								
Air Slide	AC-301	22 tph	Fuller	100 MM	NA	1997	DC-304	Sections III & V
Air Slide	AC-302	380tph	Fuller	350 MM	NA	1990	DC-304	Sections III & V
Air Slide	AC-316	760 tph	Fuller	480 MM	NA	1990	DC-301	Sections III & V
Raw Mix Bin	B-301	278 tons	NA	NA	NA	1990	DC-301	Sections III & V
Belt Conveyor	BC-300	360 tph	S&W Steel	NA	NA	1990	DC-301	Sections III & V
Belt Conveyor	BC-303	215 tph	S&W Steel	NA	NA	1990	DC-301	Sections III & V
Dryer	FR-300	24 MM btu/hr	Conamara	Size 25	NA	1990	DC-301	Sections III & V
Dryer	FR-301	21.5 MM btu/hr	Hauck	NMG180A	NA	1959	DC-301	Sections III & V
Ball Mill	BM-301	NA	FLSmidth	12x19	NA	1959	DC-301	Sections III & V
Elevator	E-301	600 tph	Rexnord	NA	1636-2612-D	1990	DC-301	Sections III & V
Separator	SE-300	NA	Sepax	400-1F	NA	1990	DC-301	Sections III & V
Cyclone	CY-300	NA	FLSmidth	NA	NA	1990	DC-301	Sections III & V
Cyclone	CY-301	NA	FLSmidth	NA	NA	1990	DC-301	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
FK Pump	PN-301	NA	Fuller	H-10-8214 Z conv.	NA	1959	DC-304	Sections III & V
FK Pump	PN-341	NA	Fuller	10" Type Z Conv.	NA	1972	DC-304	Sections III & V
Screw Conveyor	SC-301	NA	NA	NA	NA	1990	DC-301	Sections III & V
Weigh Feeder	W-301	215 tph	S&W Steel	NA	NA	1984	DC-301	Sections III & V
Screw Conveyor	SC-310	NA	NA	NA	NA	1984	DC-301	Sections III & V
<b>Swing Grinding System No. 2</b>								
Air Slide	AC-304	380 tph	Fuller	350 MM	NA	1959	DC-305	Sections III & IV
Air Slide	AC-305	475 tph	Fuller	400 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-306	166 tph	Fuller	250 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-311	166 tph	Fuller	250 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-313	166 tph	Fuller	250 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-314	166 tph	Fuller	250 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-317	760 tph	Fuller	480 MM	NA	1959	DC-302	Sections III & V
Air Slide	AC-321	475 tph	Fuller	400 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-322	475 tph	Fuller	400 MM	NA	1959	DC-305	Sections III & V
Air Slide	AC-329	475 tph	Fuller	400 MM	NA	1959	DC-305	Sections III & V
Raw Mix Clinker Bin	B-302	200 Tons	NA	NA	NA	1959	DC-305	Sections III & V
Belt Conveyor	BC-304	100 tph	Hewitt Robins	NA	NA	1958	DC-305	Sections III & V
Ball Mill	BM-302	NA	FLSmith	12x19	NA	1959	DC-302	Sections III & V
Dryer BM302	FR-302	21.5 MM btu/hr	Hauck	NMG180A	NA	1959	DC-302	Sections III & V
Bucket Elevator	E-302	420 tph	Jeffery	NA	NA	1958	DC-305	Sections III & V
FK Pump	PN-302	NA	Fuller	H2-8-8215	NA	1958	DC-305	Sections III & V
Screw Conveyor	SC-303	210 tph	NA	NA	NA	1959	DC-302	Sections III & V
Screw Conveyor	SC-304	210 tph	NA	NA	NA	1959	DC-302	Sections III & V
Screw Conveyor	SC-308	NA	NA	NA	NA	1959	DC-302	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Screw Conveyor	SC-311	NA	NA	NA	NA	1959	DC-305	Sections III & V
Separator	SE-303	NA	C.E. Raymond	14-0 D.W.	58089	1958	DC-302	Sections III & V
Separator	SE-304	NA	C.E. Raymond	14-0 D.W.	58090	1958	DC-302	Sections III & V
Weigh Feeder	W-303	3 tph	Ramsey	NA	NA	1990		Sections III & V
<b>Feed Blending</b>								
Air Slide	AC-607	760 tph	BMH	500 MM	NA	1995	DC-601	Sections III & V
Air Slide	AC-608	760 tph	BMH	500 MM	NA	1995	DC-607	Sections III & V
Raw Meal Silo	S-601	1500 tons	NA	NA	NA	1959	DC-601	Sections III & V
Raw Meal Silo	S-602	1600 tons	NA	NA	NA	1959	DC-601	Sections III & V
Homogenizing Silo	S-605	2000 tons	NA	NA	NA	1959	DC-607	Sections III & V
Air Slide	AC-609	475 tph	FBH	400 MM	NA	2001-2002	DC-607	Sections III & V
FK Pump	PN-601	NA	FBH	350-M-00-10428-116	NA	2001-2002	DC-607	Sections III & V
FK Pump	PN-602	NA	FBH	350-M-00-10428-116-1	NA	2001-2002	DC-607	Sections III & V
Air Slide	AC-600	475 tph	BMH	400 MM	NA	1995	DC-606	Sections III & V
Air Slide	AC-601	475 tph	BMH	400 MM	NA	1995	DC-606	Sections III & V
Air Slide	AC-601A	NA	BMH	200 MM	NA	1995	DC-601	Sections III & V
Air Slide	AC-602	475 tph	BMH	400 MM	NA	1995	DC-605	Sections III & V
Air Slide	AC-602A	NA	BMH	200 MM	NA	1995	DC-601	Sections III & V
Air Slide	AC-603	475 tph	BMH	400 MM	NA	1995	DC-605	Sections III & V
Air Slide	AC-604	475 tph	FBH	400 MM	NA	2001	DC-607	Sections III & V
Air Slide	AC-605	NA	NA	NA	NA	2001	DC-607	Sections III & V
Air Slide	AC-606	475 tph	BMH	400 MM	NA	1995	DC-607	Sections III & V
Bucket Elevator	E-600	595 tph	Rexnord	1636-2812G	23361-1A	1995	DC-601	Sections III & V
<b>Kiln Feed</b>								
Alleviator	AM-407	NA	FBH	90-0830-21320-	106	2001-2002	DC-409	Sections III & V



Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
				532				
Bin	B-407	60 tons	Schuff Steel	NA	NA	2001-2002	DC-410	Sections III & V
Air Slide	AC-408	380 tph	FBH	350 MM	NA	2001-2002	DC-410	Sections III & V
Air Slide	AC-409	380 tph	FBH	350 MM	NA	2001-2002	DC-410	Sections III & V
Air Slide	AC-410	380 tph	FBH	350 MM	NA	2001-2002	DC-410	Sections III & V
Air Slide	AC-413	380 tph	FBH	350 MM	NA	2001-2002	DC-411	Sections III & V
Air Slide	AC-414	380 tph	FBH	350 MM	NA	2001-2002	DC-410	Sections III & V
Air Slide	AC-415	380 tph	FBH	350 MM	NA	2001-2002	DC-410	Sections III & V
Feeder	WS-404	NA	Pfister	NA	NA	2001-2002	DC-410	Sections III & V
Feeder	WS-405	280 tph	Schenck	DLM-26	NA	2001-2002	DC-410	Sections III & V
Clinker Feed Loadout	LSP	380 tph	DCL	UN800EV-06VT	NA	2016	DC-618	Section V
<b>Raw Grinding System No. 3</b>								
Apron Feeder	AF-360	410 tph	Rexnord	R2342-K21	NA	2001-2002	DC-431	Sections III & V
Air Slide	AC-360	285 tph	F.B.H.	300 MM	NA	2001-2002	DC-411	Sections III & V
Air Slide	AC-361	285 tph	F.B.H.	300 MM	NA	2001-2002	DC-411	Sections III & V
Air Slide	AC-362	475 tph	F.B.H.	400 MM	NA	2001-2002	DC-411	Sections III & V
Air Slide	AC-363	475 tph	F.B.H.	400 MM	NA	2001-2002	DC-367	Sections III & V
Air Slide	AC-364	475 tph	F.B.H.	400 MM	NA	2001-2002	DC-368	Sections III & V
Belt Conveyor	BC-360	315 tph	Conveyor Engineering	NA	NA	2001-2002	DC-366	Sections III & V
Belt Conveyor	BC-361	500 tph	Conveyor Engineering	NA	NA	2001-2002	DC-366	Sections III & V
Belt Conveyor	BC-363	184 tph	Conveyor Engineering	NA	NA	2001-2002	DC-366	Sections III & V
Bucket Elevator	E-360	184 tph	Rexnord	2126-2410F	NA	2001-2002	DC-366	Sections III & V
Raw Mill Seal Bin	B-360	220 Tons	Schuff Steel	NA	NA	2001-2002	DC-366	Sections III & V
Cyclone	CY-360	NA	FLSmidth	L6300	NA	2001-2002	DC-431	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Cyclone	CY-361	NA	FLSmidth	L6300	NA	2001-2002	DC-431	Sections III & V
Raw Mill	RM-306	NA	FLSmidth	FRM38/170	NA	2001-2002	DC-431	Sections III & V
Separator	SE-360	NA	FLSmidth	RAR37.5	NA	2001-2002	DC-431	Sections III & V
Spillage Conveyor	BC-362	NA	Rexnord	NA	NA	2001-2002	DC-431	Sections III & V
FK Pump	PN-402	NA	FLSmidth	8-H2Z-00-10428-116-2	NA	2001-2002	DC-367	Sections III & V
FK Pump	PN-403	NA	FLSmidth	8-H2Z-00-10428-116	NA	2001-2002	DC-367	Sections III & V
Screw Conveyor	SC-430	NA	FBH	10M320C166	NA	2001-2002	DC-431	Sections III & V
Screw Conveyor	SC-431	NA	FBH	10M320C166	NA	2001-2002	DC-431	Sections III & V
Screw Conveyor	SC-432	NA	FBH	10M320C166	NA	2001-2002	DC-367	Sections III & V
<b>Pyroprocessing System</b>								
Eductor	FMRS-404	0.5 tph	Fox Venturi	4"	NA	2004	DC-431	Sections III & V
Pre-Heater	PH-404	NA	FLSmidth	NA	NA	2001-2002	DC-431	Sections III & V
Pre-Heater	PH-405	NA	FLSmidth	NA	NA	2001-2002	DC-431	Sections III & V
Pre-Heater	PH-406	NA	FLSmidth	NA	NA	2001-2002	DC-431	Sections III & V
Pre-Heater	PH-407	NA	FLSmidth	NA	NA	2001-2002	DC-431	Sections III & V
Pre-Heater	PH-408	NA	FLSmidth	NA	NA	2001-2002	DC-431	Sections III & V
Calcliner	CAL-404	NA	FLSmidth	ILC Low Nox	NA	2001-2002	DC-431	Sections III & V
Kiln	K-404	NA	FLSmidth	4400x48000	NA	2001-2002	DC-431	Sections III & V
Clinker Cooler	CC-404	NA	FLSmidth	SF3X4F	NA	2001-2002	DC-445	Sections III & V
Screw Conveyor	SC-461	26 tph	Transmission Products	NA	NA	2001-2002	DC-445	Sections III & V
Screw Conveyor	SC-462	45 tph	Transmission Products	NA	NA	2001-2002	DC-445	Sections III & V
Screw Conveyor	SC-463	45 tph	Transmission Products	NA	NA	2001-2002	DC-445	Sections III & V
Screw Conveyor	SC-465	26 TPH	Transmission	NA	NA	2001-2002	DC-446	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
			Products					
Screw Conveyor	SC-466	71 tph	Transmission Products	NA	NA	2001-2002	DC-446	Sections III & V
Screw Conveyor	SC-467	71 tph	Transmission Products	NA	NA	2001-2002	DC-446	Sections III & V
<b>Clinker Transport</b>								
Belt Conveyor	BC-402	300 tph	Conveyor Engineering	NA	NA	2001-2002	DC-448	Sections III & V
Belt Conveyor	BC-403	300 tph	Conveyor Engineering	NA	NA	2001-2002	DC-212	Sections III & V
Bucket Elevator	E-404	190 tph	Rexnord	1626-1410B	NA	2001-2002	DC-447	Sections III & V
Pan Conveyor	DBC-404	190 TPH	Rexnord	AFT	NA	2001-2002	DC-446	Sections III & V
Clinker Bin	B-404	1500 tons	Schuff Steel	NA	NA	2001-2002	DC-447	Sections III & V
Vibrating Feeder	VF-404	165 tph	Jeffery	NF 3605	1006919A	2001-2002	DC-447	Sections III & V
<b>Mill Feed/ Clinker &amp; Gypsum Handling</b>								
Gypsum Bin	B-300	100 tons	NA	NA	NA	Pre-3/24/98	DC-306	Sections III & V
Clinker Bin	B-303	200 tons	NA	NA	NA	1959	DC-342	Sections III & V
Clinker Bin	B-340	100 tons	NA	NA	NA	1974	DC-342	Sections III & V
Gypsum Bin	B-341	40 tons	NA	NA	NA	1974	DC-304	Sections III & V
Screw Conveyor	SC-312	NA	NA	NA	NA	1974	DC-306	Sections III & V
Belt Conveyor	BC-312	300 tph	Conveyor Engineering	NA	NA	2001-2002	DC-312	Sections III & V
Belt Conveyor	BC-313	300 tph	Conveyor Engineering	NA	NA	2001-2002	DC-306	Sections III & V
Belt Conveyor	BC-350	176 tph	Conveyor Engineering	NA	NA	2001-2002	DC-352	Sections III & V
Clinker Bin	B-350	250 tons	Schuff Steel	NA	NA	2001-2002	DC-312	Sections III & V
Gypsum Bin	B-351	100 tons	Schuff Steel	NA	NA	2001-2002	DC-312	Sections III & V
Scavenger Conveyor	SC-350	NA	Schenck	NA	NA	2001-2002	DC-352	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Scavenger Conveyor	SC-351	NA	Schenck	NA	NA	2001-2002	DC-352	Sections III & V
Weigh Feeder	W-350	161 tph	Schenck	DMO	NA	2001-2002	DC-352	Sections III & V
Weigh Feeder	W-351	15 tph	Schenck	DMO	NA	2001-2002	DC-352	Sections III & V
<b>Finish Milling</b>								
Gypsum Hopper	HP-301	NA	NA	NA	NA	2001-2002		Sections III & V
Gypsum Feeder	F-301/DCH-300	300 tph	Oldenburg Stamler	BF-7Q-0-100	13609	2001-2002		Sections III & V
<b>Finish Mill BM 303</b>								
Air Slide	AC-307	166 tph	Fuller	250 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-308	475 tph	Fuller	400 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-309	166 tph	Fuller	250 MM	NA	1959	DC-303	Sections III & V
Aft Slide	AC-312	166 tph	Fuller	250 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-315	166 tph	Fuller	250 MM	NA	1959	DC-306	Sections III & V
Air Slide	AC-318	760 tph	Fuller	480 MM	NA	1958	DC-306	Sections III & V
Air Slide	AC-323	475 tph	Fuller	400 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-324	475 tph	Fuller	400 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-330	475 tph	Fuller	400 MM	NA	1959	DC-303	Sections III & V
Air Slide	AC-331	166 tph	Fuller	250 MM	NA	1959	DC-306	Sections III & V
Belt Conveyor	BC-305	100 tph	Hewitt Robins	NA	NA	1958	DC-306	Sections III & V
Ball Mill	BM-303	NA	NA	NA	NA	1959	DC-303	Sections III & V
Bucket Elevator	E-303	420 tph	Jeffery	NA	NA	1958	DC-306	Sections III & V
Screw Conveyor	SC-305	NA	NA	NA	NA	1959	DC-303	Sections III & V
Screw Conveyor	SC-309	NA	NA	NA	NA	1959	DC-303	Sections III & V
<b>Clinker Storage and Transport</b>								
Belt Conveyor	BC-216	336 tph	Watkins	NA	NA	2001-2002	DC-213	Sections III & V
Belt Conveyor	BC-217	336 tph	Watkins	NA	NA	2001-2002	DC-214	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Belt Conveyor	BC-309	336 tph	Watkins	NA	NA	2001-2002	DC-316	Sections III & V
Clinker Storage Dome	DO-200	100,000 tons	Dome Technology	NA	NA	2001-2002	DC-213	Sections III & V
Clinker Storage Dome	DO-201	25,000 tons	Dome Technology	NA	NA	2001-2002	DC-214	Sections III & V
Belt Conveyor	BC-310	300 tph	Conveyor Engineering	NA	NA	2001-2002	DC-312	Sections III & V
<b>Coal and Coke Handling and Grinding</b>								
Belt Conveyor	BC-460	250 tph	Thomas Conveyor	NA	NA	1974	DC-460	Section VII.A
Belt Conveyor	BC-461	250 tph	Thomas Conveyor	NA	NA	1974		Section VII.A
Belt Conveyor	BC-462	250 tph	Thomas Conveyor	NA	NA	1974	DC-450	Section VII.A
Belt Conveyor	BC-463	250 tph	Thomas Conveyor	NA	NA	1974	DC-460	Section VII.A
Belt Feeder	BC-464	32 tph	Thomas Conveyor	NA	NA	1974		Section VII.A
Crusher	CR-460	250 tph	Pennsylvania Crusher	TK-8-32B	4160-02	1974	DC-460	Section VII.A
Vibrating Feeder	F-460	150 tph	Westinghouse	V4ALT-PLAN-10T-SPL	NA	1974		Section VII.A
Vibrating Feeder	F-461	150 tph	Westinghouse	V4ALT-PLAN-10T-SPL	NA	1974		Section VII.A
Screw Feeder	SC-465-0	32 tph	NA	NA	NA	1974		Section VII.A
Belt Conveyor	BC-451	150 tph	Transmission Products	NA	NA	2001-2002	DC-452	Section VII.B
Belt Conveyor	BC-453	150 tph	Transmission Products	NA	NA	2001-2002	DC-452	Section VII.B
Coal Bin	B-450	400 tons	Schuff Steel	NA	NA	2001-2002	DC-452	Section VII.B

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Pet-Coke Bin	B-451	175 tons	Schuff Steel	NA	NA	2001-2002	DC-452	Section VII.B
Weigh Feeder	W-450	33.9 tph	Schenck	DMO	NA	2001-2002	DC-451	Section VII.B
Weigh Feeder	W-451	33.9 tph	Schenck	DMO	NA	2001-2002	DC-451	Section VII.B
Belt Conveyor	BC-454	34 tph	Conveyor Engineering	NA	NA	2001-2002	DC-451	Section VII.B
Separator	SE-450	NA	FLSmidth	KF-128-A160	481-104-579	2001-2002	DC-453	Sections III & V
Coal Mill	RM-450	NA	FLSmidth	FRM19/26	NA	2001-2002	DC-453	Sections III & V
Screw Conveyor	SC-456	NA	FLSmidth	MSDS-A 290	NA	2001-2002	DC-453	Section VII.B
Rail Car Hopper	HP-460A	44.5	NA	NA	NA	1974		Section VII.A
Rail Car Hopper	HP-460B	44.5	NA	NA	NA	1974		Section VII.A
Coal Unelevator	UE-461	NA	NA	NA	NA	1974		Section VII.A
Coal Hopper	HP-461	100 tons	NA	NA	NA	1974		Section VII.A
Coke Hopper	HP-462	100 tons	NA	NA	NA	1974		Section VII.A
<b>Coal and Coke Grinding and Firing</b>								
Pulverized Fuel Bin	B-452	20 tons	Schuff Steel	NA	NA	2001-2002	DC-454	Sections III & V
Pulverized Fuel Bin	B-453	20 tons	Schuff Steel	NA	NA	2001-2002	DC-455	Sections III & V
Screw Conveyor	SC-453	48 tph	Conveyor Engineering	NA	NA	2001-2002	DC-453	Sections III & V
Screw Conveyor	SC-454	48 tph	Conveyor Engineering	NA	NA	2001-2002	DC-454/455	Sections III & V
Screw Conveyor	SC-455	48 tph	Conveyor Engineering	NA	NA	2001-2002	DC-454/455	Sections III & V
Feeder	PW-452	NA	Pfister	DRW 3.10	NA	2001-2002	DC-431	Sections III & V
Feeder	PW-451	NA	Pfister	DRW 3.10	NA	2001-2002	DC-431	Sections III & V
Screw Conveyor	SC-306	210 tph	NA	NA	NA	1959	DC-303	Sections III & V
Separator	SE-305	210 tph	C.E. Raymond	14-0 D.W.	58091	1958	DC-303	Sections III & V
Separator	SE-306	NA	C.E. Raymond	14-0 D.W.	58092	1958	DC-303	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Weigh Feeder	W-305	3 tph	Ramsey	NA	NA	1981		Sections III & V
<b>Finish Mill BM 304</b>								
Air Slide	AC-340	380 tph	Fuller	350 MM	NA	1972	DC-341	Sections III & V
Air Slide	AC-341	166 tph	Fuller	250 MM	NA	1972	DC-340	Sections III & V
Air Slide	AC-342	166 tph	Fuller	250 MM	NA	1972	DC-340	Sections III & V
Air Slide	AC-343	166 tph	Fuller	250 MM	NA	1972	DC-340	Sections III & V
Air Slide	AC-344	166 tph	Fuller	250 MM	NA	1972	DC-340	Sections III & V
Air Slide	AC-346	22 tph	Fuller	100 MM	NA	1983	DC-309	Sections III & V
Air Slide	AC-347	22 tph	Fuller	100 MM	NA	1983	DC-308	Sections III & V
Fly Ash Bin	B-342	500 tons	Brown Tank	NA	NA	1983	DC-309	Sections III & V
Hydrated Lime Bin	B-343	105 tons	Brown Tank	NA	NA	1983	DC-308	Sections III & V
Belt Conveyor	BC-341	10 tph	Airbelt	NA	NA	1974	DC-344	Sections III & V
Belt Conveyor	BC-342	10 tph	Airbelt	NA	NA	1974	DC-344	Sections III & V
Belt Conveyor	BC-343	21.7 tph	Cambelt	CWR2445-6	NA	1997	DC-340	Sections III & V
Ball Mill	BM-304	NA	Allis Chalmers	9.5 X 33	NA	1972	DC-341	Sections III & V
Bucket Elevator	E-340	300 tph	Rexnord	NA	4120-04	1972	DC-341	Sections III & V
FK Pump	PN-340	125 tph	Fuller	8" Z Conv	NA	1972	DC-343	Sections III & V
Screw Conveyor	SC-320	NA	NA	NA	NA	1974	DC-306 DC-341 DC-343	Sections III & V
Screw Conveyor	SC-316	NA	NA	NA	NA	1974	DC-306	Sections III & V
Screw Conveyor	SC-317	NA	NA	NA	NA	1974	DC-306	Sections III & V
Screw Conveyor	SC-340	204 tph	NA	NA	NA	1974	DC-340	Sections III & V
Screw Conveyor	SC-341	NA	NA	NA	NA	1974	DC-340	Sections III & V
Screw Conveyor	SC-342	NA	NA	NA	NA	1974	DC-341	Sections III & V
Separator	SE-307	NA	C.E. Raymond	16-0 D.W.	NA	1972	DC-340	Sections III & V
Weigh Belt Conveyor	W-340	50 tph	Merrick	NA	NA	1974	DC-341	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Weigh Belt Conveyor	W-341	5 tph	Merrick	NA	NA	1974	DC-341	Sections III & V
Weigh Belt Conveyor	W-342	NA	NA	NA	NA	1974		Sections III & V
Hopper w/ Scale	WS-340	NA	NA	NA	NA	1974	DC-309	Sections III & V
Hopper w/ Scale	WS-341	NA	NA	NA	NA	1974	DC-308	Sections III & V
<b>Clinker Grinding OK Mill</b>								
FK Pump	PN-350	NA	Fuller	10" Z Conv	NA	2001-2002	PDC-350	Sections III & V
FK Pump	PN-351	NA	Fuller	10" Z Conv	NA	2001-2002	PDC-351	Sections III & V
Air Slide	AC-350	285 tph	F.B.H.	300 MM	NA	2001-2002	ACV-352 & ACV-353	Sections III & V
Air Slide	AC-351	285 tph	F.B.H.	300 MM	NA	2001-2002	ACV-351	Sections III & V
Air Slide	AC-352	285 tph	F.B.H.	300 MM	NA	2001-2002	ACV-352	Sections III & V
Air Slide	AC-353	285 tph	F.B.H.	300 MM	NA	2001-2002	ACV-353	Sections III & V
Air Slide	AC-354	285 tph	F.B.H.	300 MM	NA	2001-2002	DC-350	Sections III & V
Air Slide	AC-355	285 tph	F.B.H.	300 MM	NA	2001-2002	DC-350	Sections III & V
Surge Bin	B-352	NA	Schuff Steel	NA	NA	2001-2002	DC-352	Sections III & V
Belt Conveyor	BC-351	241 tph	Conveyor Engineering	NA	NA	2001-2002	DC-352	Sections III & V
Bucket Elevator	E-350	240 tph	Rexnord	1626-1810B	NA	2001-2002	DC-352	Sections III & V
Chain Conveyor	DCH-350	65 tph	Rexnord	20"	NA	2001-2002	DC-350	Sections III & V
Chain Conveyor	DCH-351	65 tph	Rexnord	20"	NA	2001-2002	DC-350	Sections III & V
Dryer	FR-350	15 MM btu/hr	Conamara	NA	NA	2001-2002	DC-350	Sections III & V
OK Mill	RM-305	NA	FLSmdth	OK 33-4	NA	2001-2002	DC-350	Sections III & V
Separator	SE-308	NA	FLSmdth	OKS 70	NA	2001-2002	DC-350	Sections III & V
<b>Bag Packing</b>								
Air Slide	AC-501	475 tph	Halliburton	400 MM	NA	1985	DC-501	Sections III & V
Air Slide	AC-502	475 tph	Halliburton	400 MM	NA	1985	DC-505	Sections III & V



Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Air Slide	AC-505	475 tph	Fuller	400 MM	NA	1959	DC-504	Sections III & V
Air Slide	AC-506	475 tph	Fuller	400 MM	NA	1959	DC-501	Sections III & V
Air Slide	AC-513	285 tph	Fuller	300 MM	NA	1987	DC-505	Sections III & V
Air Slide	AC-514	475 tph	Fuller	400 MM	NA	2005	DC-504	Sections III & V
Air Slide	AC-515	475 tph	Fuller	400 MM	NA	2005	DC-504	Sections III & V
Bin	B-501	NA	TWI	NA	NA	2005	DC-501	Sections III & V
Bin	B-502	NA	TWI	NA	NA	2005	DC-505	Sections III & V
Belt Conveyor	BBG-501	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Belt Conveyor	BC-501	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Bucket Elevator	E-501	NA	Link Belt	NA	NA	1959	DC-501	Sections III & V
Bucket Elevator	E-502	NA	Link Belt	NA	NA	1959	DC-505	Sections III & V
Bag Packer	BP-503	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Bag Cutter	BS-501	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
FK Pump	PN-501	NA	Fuller	10" Z Conv	NA	2005	DC-504	Sections III & V
Rotary Screen	RSC-501	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-503	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-504	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-505	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-506	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-507	NA	Vento Matic	NA	NA	2005	DC-511	Sections III & V
Screw Conveyor	SC-508	NA	Vento Matic	NA	NA	2005	DC-501/505	Sections III & V
Vibratory Feeder	VF-501	NA	Vento Matic	NA	NA	2005	DC-501	Sections III & V
Vibratory Feeder	VF-502	NA	Vento Matic	NA	NA	2005	DC-505	Sections III & V
<b>Bulk Loading</b>								
East Side Scale Loadout	AC-507	475 tph	Fuller	400 MM	NA	1959	DC-503	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Air Slide	AC-508	475 tph	Halliburton	400 MM	NA	1985	DC-504	Sections III & V
West Side Scale Loadout	AC-509	475 tph	Halliburton	400 MM	NA	1985	DC-504	Sections III & V
Air Slide	AC-511	475 tph	Fuller	400 MM	NA	1976	DC-501/505	Sections III & V
Air Slide	AC-512	118 tph	Fuller	200 MM	NA	1976	DC-504	Sections III & V
West Side Scale Loadout	LSP	1282 tph	DCL	UN600EV-06VT	NA	2003	DC-504	Sections III & V
East Side Scale Loadout	LSP	1282 tph	DCL	UN600EV-06VT	NA	2003	DC-503	Sections III & V
Silo 15/16 Loadout	LSP	1282 tph	Midwesco	NA	NA	1976	DC-507	Sections III & V
<b>Cement Storage</b>								
Screw Conveyor	SC-510	NA	NA	NA	NA	2001-2002	DC-510	Sections III & V
Silo 15	S-15	753 tons	NA	NA	NA	1980	DC-512	Sections III & V
Silo 16	S-16	753 tons	NA	NA	NA	1980	DC-512	Sections III & V
South Finish Silo 1	S-1	2764 tons	NA	NA	NA	1959	DC-508	Sections III & V
South Finish Silo 2	S-2	3257 tons	NA	NA	NA	1959	DC-508	Sections III & V
South Finish Silo 6	S-6	3156 tons	NA	NA	NA	1959	DC-508	Sections III & V
South Finish Silo 7	S-7	3244 tons	NA	NA	NA	1959	DC-508	Sections III & V
South Finish Silo 11	S-11	881 tons	NA	NA	NA	1959	DC-508	Sections III & V
South Finish Silo 12	S-12	881 tons	NA	NA	NA	1959	DC-508	Sections III & V
Cement Silo 3	S-3	3136 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 4	S-4	3029 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 5	S-5	2922 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 8	S-8	3136 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 9	S-9	3012 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 10	S-10	2922 tons	NA	NA	NA	1959	DC-510	Sections III & V
Cement Silo 13	S-13	834 tons	NA	NA	NA	1959	DC-510	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Cement Silo 14	S-14	650 tons	NA	NA	NA	1959	DC-510	Sections III & V
<b>Raw Material Sweetening</b>								
Belt Conveyor	BC-221	700 tph	NA	NA	NA	2008	DC-222	Section VI.B
Belt Conveyor	BC-222	700 tph	NA	NA	NA	2008	DC-224	Section VI.B
Bin	B-224	1500 tons	NA	NA	NA	2008	DC-224	Section VI.B
Apron Feeder	AF-224	50 tph	NA	NA	NA	2008	DC-224	Section VI.B
Weigh Feeder	WF-224	50 tph	NA	NA	NA	2008	DC-224	Section VI.B
Bin	B-226	50 tph	NA	NA	NA	2008		Section VI.B
Bin	B-227	50 tph	NA	NA	NA	2008		Section VI.B
Apron Feeder	AF-226	10 tph	NA	NA	NA	2008		Section VI.B
Apron Feeder	AF-227	5 tph	NA	NA	NA	2008		Section VI.B
Belt Conveyor	BC-226	10 tph	NA	NA	NA	2008		Section VI.B
Belt Conveyor	BC-227	5 tph	NA	NA	NA	2008		Section VI.B
Belt Conveyor	SCV-226	NA	NA	NA	NA	2008		Section VI.B
Belt Conveyor	SCV-227	NA	NA	NA	NA	2008		Section VI.B
Belt Conveyor	BC-211A	350 tph	NA	NA	NA	2008	DC-228	Section VI.B
Belt Conveyor	BC-211B	350 tph	NA	NA	NA	2008	DC-228	Section VI.B
Belt Conveyor	DBC-228	350 tph	NA	NA	NA	2008	DC-228	Section VI.B
Bin	B-228	220 tph	NA	NA	NA	2008	DC-228	Section VI.B
Apron Feeder	AF-228	350 tph	NA	NA	NA	2008	DC-228	Section VI.B
Belt Conveyor	BC-228	350 tph	NA	NA	NA	2008	DC-228	Section VI.B
<b>Blending System</b>								
Air Slide	AC-365	NA	NA	NA	NA	2008	DC-608	Sections III & V
Elevator	E-606	350 tph	NA	NA	NA	2008	DC-608	Sections III & V
Air Slide	AC-613	NA	NA	NA	NA	2008	DC-608	Sections III & V
Feed Discharge System	FDS-606	NA	NA	NA	NA	2008	DC-609	Sections III & V

Type/Description	Equipment ID	Max Capacity	Manufacturer	Model Number	Serial Number	Date of Mfg.	Control Device	Applicable Section
Air Slide	AC-610	NA	NA	NA	NA	2008	DC-609	Sections III & V
Silo	S-606	10000 tons	NA	NA	NA	2008	DC-609	Sections III & V
Feed Discharge Air Slide	AC-611	NA	NA	NA	NA	2008	DC-609	Sections III & V
Feed Discharge Bin	B-606	NA	NA	NA	NA	2008	DC-610	Sections III & V
Air Slide	AC-614	NA	NA	NA	NA	2008	DC-609	Sections III & V
Elevator	E-607	350	NA	NA	NA	2008	DC-608	Sections III & V
Feed Discharge Air Slide	AC-612	NA	NA	NA	NA	2008	DC-610	Sections III & V
<b>Cooling Towers</b>								
Mill Cooling Tower	CTWR-300	598 gpm	Marley	NA	NA	1959		Section IX
RM-305 Cooling Tower	CTWR-302	598 gpm	Marley	AV-61002, G-235	NA	2001-2002		Section IX
Kiln - Raw Mill Cooling Tower	CTWR-400	907 gpm	Marley	AV-61002, G-235	NA	2001-2002		Section IX
<b>Emergency Generator</b>	EG-404	587 HP				Pre December 19, 2002		Section VIII
Gasoline Storage Tank	TK-702	8,000 gallons	NA	NA	NA	NA		Section XIV
Diesel Storage Tank	TK-703	15,000 gallons	NA	NA	NA	NA		Section XV
<b>Auxiliary Equipment</b>								
Aqueous Ammonia Storage Tank	TBD	TBD	TBD	TBD	TBD	TBD	N/A	N/A
Selective Non-Catalytic Reduction Control System	TBD	TBD	TBD	TBD	TBD	TBD	N/A	Section XVI

### Dust Collectors

Equipment ID	Installation Date	Manufacturer	Capacity (cfm)
DC-100	1986	Dusty Dustless	1000
DC-101	2009	FLS Airtech	23050
DC-102	2009	FLS Airtech	26300
DC-103	2009	FLS Airtech	6736
DC-201A	2006	FLS Airtech	4000
DC-202	1985	Ultra Industry	5000
DC-205	1959	Norblo	5832
DC-228A/DC-211	2008	FLS Airtech	2000
DC-212	2002	Sly	2000
DC-213	2002	Sly	4000
DC-214	2002	Sly	4000
DC-222	2008	FLS Airtech	2000
DC-224	2008	FLS Airtech	6000
DC-228B/DC-228	2008	FLS Airtech	8000
DC-301	1984	Fabric Filters NW	60000
DC-302	2007	GE Energy	32700
DC-303	2008	GE Energy	32700
DC-304	1959	Norblo	12000
DC-305	1959	Norblo	12000
DC-306	1959	Norblo	12000
DC-308	1983	Ultra Industry	2500
DC-309	1983	FlexKleen	2400
DC-312	2002	FBH	6050
DC-316	2002	FBH	3100
DC-340	1972	Mikropul	20000
DC-341	2009	FLS Airtech	10000
DC-342	1972	Mikropul	5000
DC-343	1998	Mikropul	1500
DC-344	1972	Mikropul	5000
DC-350	2002	FBH	228000
DC-352	2002	FBH	10000
DC-366	2002	FBH	8400
DC-367	2002	FBH	1850
DC-368	2002	FBH	1600
DC-409	2002	FBH	11350
DC-410	2002	FBH	2950
DC-411	2002	FBH	1300
DC-431	2002	FBH	259200
DC-445	2002	FBH	138000
DC-446	2002	FBH	2900

Equipment ID	Installation Date	Manufacturer	Capacity (cfm)
DC-447	2002	FBH	7150
DC-448	2002	FBH	3100
DC-450	2002	FBH	3000
DC-451	2002	FBH	3720
DC-452	2002	FBH	5360
DC-453	2002	FBH	38800
DC-454	2002	FBH	30
DC-455	2002	FBH	30
DC-460	1974	FBH	6000
DC-501	2003	BHA	8210
DC-503	1959	Mikropul	3000
DC-504	1959	Pangborn	6000
DC-505	2004	BHA	8210
DC-507	2006	US Filter	755
DC-508	1986	Ecolaire	5000
DC-510	2002	FBH	13300
DC-511	2005	Scientific	13300
DC-512	2005	FLS Airtech	8000
DC-601	1972	Mikropul	7200
DC-607	2007	FLS Airtech	11500
DC-605	1996	Fuller Kovako	2500
DC-606	1996	Wheelabrator	500
DC-608/DC-615	2008	FLS Airtech	6000
DC-609/DC-616	2008	FLS Airtech	6000
DC-610/DC-617	2008	FLS Airtech	4000
DC-618	2016	DCL	2000
PDC-350	2017	DCL	500
PDC-351	2017	DCL	500
ACV-351	2017	DCL	250
ACV-352	2017	DCL	250
ACV-353	2017	DCL	250

## ATTACHMENT “D”: DUST CONTROL PLAN

### I. INTRODUCTION

#### A. Requirements and Policy

Arizona Administrative Code Title 18, Chapter 2, (AAC R18-2) Article 6 requires that an operator take reasonable precautions to prevent excess amounts of particulate matter (PM) from becoming airborne from sources of fugitive dust, including open areas, roadways and streets, material handling, and storage piles. Under AAC R18-2-610, opacity from any nonpoint source shall not be greater than 40 percent, measured in accordance with the Arizona Testing Manual, Reference Method 9.

Phoenix Cement Company’s (PCC’s) dust control goals include ongoing road-paving activities, watering or otherwise treating unpaved roads and parking areas, taking other reasonable precautions to prevent excess amounts of PM from becoming airborne, and to maintain compliance with the 40 percent opacity standard. PCC will accomplish these goals with diligent use of practical methods, equipment, and procedures currently utilized at the Clarkdale facility. PCC is committed to operating as an environmentally responsible producer of quality cement products.

#### B. Background

The PCC Clarkdale facility includes a cement manufacturing plant and an adjacent quarry. The cement plant utilizes rotary kilns fired by coal/coke, coal, and natural gas to produce cement from various types of materials, including limestone, volcanic ash, and mill scale.

Limestone and other types of rock are blasted and transported by haul trucks from the quarry to the primary crusher or to stockpiles. Crushed rock is routed to surge piles for subsequent transfer to the secondary crusher. The secondary crusher is used in conjunction with feeders and screens to further reduce the size of the rock that is sent to raw mill storage bays.

The crushed rock is conveyed from the storage bays to the raw mill for grinding via the rock bin, elevator and separator. Milled material (raw meal) is transported to the blending system, and then it is transported into feed bins from which the meal is discharged to the pyroprocessing system.

The heart of the Portland cement manufacturing process is the pyroprocessing system, namely, Kiln 4. This system transforms the raw mix into clinkers, which are gray, glass-hard, spherically shaped nodules. Emission sources in the clinker handling and storage facility are eliminated by the use of indoor clinker storage enclosures (domes).

During normal operations, PCC utilizes water trucks regularly on haul roads and other unpaved roads to prevent excessive airborne dust generation. Water trucks operate on a regular basis whenever roads are in use.

#### C. CONTROL PLAN

##### 1. Roads

Various types of dust control measures may be utilized by PCC to minimize

fugitive emissions from unpaved roads. Haul roads between the quarry and the primary crusher are regularly watered on all days on which haul trucks operate. Other unpaved roads on the facility are regularly watered and/or treated with dust suppressants and/or chemical stabilizers as necessary to minimize dust from vehicular traffic and high winds.

This Dust Control Plan requires PCC to ensure that water trucks operate on each day on which haul trucks and/or other vehicular traffic occurs. If water trucks are not operated on a particular day, PCC shall record the date and the reason for non-operation.

2. Open Areas

Open areas, such as unpaved parking areas and other level areas, are regularly watered and/or treated with dust suppressants and/or chemical stabilizers as necessary to minimize dust from vehicular traffic and high winds. PCC shall ensure that water trucks operate on each day on which vehicular traffic occurs in unpaved open areas. If water trucks are not operated on a particular day, PCC shall record the date and the reason for non-operation.

3. Storage Piles

PCC has eliminated outdoor clinker storage and handling with the construction of two domed enclosures. A significant reduction in airborne fugitive dust was achieved by construction of the domes. Only raw feed is stored in outdoor storage piles. PCC adds dust suppressants and/or water to the raw feed during the primary and secondary crushing processes. As a result, the raw feed piles contain high-moisture, treated material which does not become airborne in excessive amounts.

PCC shall ensure that raw feed stored in outdoor storage piles has sufficient moisture content, or has been otherwise sufficiently treated with dust suppressants, to prevent excessive airborne dust generation. If excessive airborne dust is observed, PCC shall record the date and determine the reason(s) for the event.

4. Other Control Techniques

PCC is continually evaluating and, when practical, implementing a program to pave plant roads. In addition, PCC continues to evaluate binders, dust suppressants, and construction techniques that provide a safe, economical and environmentally responsible means of managing fugitive dust.

**D. MONITORING**

PCC shall conduct a visual survey on a daily basis to ensure that excessive amounts of fugitive dust are not becoming airborne. If excessive dust is observed, PCC shall record the date and the reasons.



**ATTACHMENT “E”: OPERATION & MAINTENANCE PLAN**